

**INSTRUCTIONS
TO
SURGEONS
SUPERINTENDENTS
OF
GOVERNMENT EMIGRANT SHIPS.**

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TO

SURGEONS SUPERINTENDENTS

OF

GOVERNMENT EMIGRANT SHIPS.



L O N D O N :

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1866.

INSTRUCTIONS
TO
SURGEONS SUPERINTENDENTS
OF
GOVERNMENT EMIGRANT SHIPS.

Introductory Remarks.

BEFORE proceeding to lay down detailed instructions for the guidance of Surgeons Superintendents on board of Government Emigrant Ships, Her Majesty's Emigration Commissioners desire to call the attention of Surgeons to the important and responsible nature of the duties imposed on them, and to the general spirit and temper in which alone those duties can be successfully carried out. Unless the mind of the Surgeon be thoroughly alive to these points, and unless he be animated in the discharge of his duties by an intelligent and active zeal, no rules which the Commissioners can lay down will secure the prosperity of the voyage.

The Surgeon is to understand that he is not only charged with the Medical care of the Emigrants, but that on him devolves also the maintenance of discipline among them, and consequently the enforcement of regulations for securing cleanliness, regularity, and good conduct. As his means of coercion are limited, and those prescribed by the Passengers' Act and the Orders in Council issued under it are not immediately available, he will have to trust very much for the attainment of these objects to the moral influence which he may acquire over the Emigrants. But his position on board, and the aid he is entitled to demand from the Schoolmaster, Matron, and Constables placed under his orders, cannot fail materially to uphold and strengthen his authority. By scrupulously regulating his own conduct and demeanour, and by a firm and decided, but kind and conciliatory, exercise of his functions,—by a considerate attention to the feelings of the people, and an impartial and just bearing in any

questions which may arise among them,—and by showing an interest in their well-being and comfort, there can be little doubt that over persons so circumstanced an officer in the position of Surgeon Superintendent may acquire a very great influence. But it is equally evident that any want of temper or justice or attention on his part would alienate the Emigrants from him, and make the performance of his duties proportionably more difficult.

Nor is it only towards the Emigrants that the Surgeon Superintendent should well consider the relation in which he stands. As their protector it will be his duty to watch over the conduct of the Master and Officers of the Ship and Crew in all that relates to the Emigrants,—to see that the proper allowance of food and water is duly issued to them,—to protect them from ill-usage or interference, and especially to prevent, as further explained hereafter, communication with the single females, whether on deck or in their own apartment below. His relations with the Officers of the ship will require the exercise of as much discretion and firmness as his relations with the Emigrants; and on his exercise of those qualities will depend not less his own comfort than the success of the voyage. He must remember that for any maltreatment of the Emigrants, or other breach of the stipulations of the Charter Party intended for their benefit, he will be held responsible by the Colonial Authorities, in whom also is vested the power to withhold all gratuities, should they be dissatisfied with his conduct and that of the Officers of the ship.

The duties of the Surgeon Superintendent may conveniently be divided into four different periods:—

1st, on joining the ship; 2nd, at the time of the people's embarkation; 3rd, during the voyage; and 4th, after the voyage is over. The following Instructions will be divided into heads corresponding with those periods.

Joining the Ship.

To join the
ship or dépôt.

1. The Surgeon Superintendent will make all his personal arrangements for the voyage before the time appointed for the embarkation of the Emigrants, and he will hold himself in readiness to join his ship, or the Emigrant Dépôt when directed. He will attend continuously at the Dépôt, where the Emigrants will be under his medical care until they are embarked, and he will assist in the preparations for their embarkation. He will not leave the Emigrants, nor after they are embarked quit the ship, without the permission of the Commissioners' Officer on the spot. He will make himself

acquainted with all the conditions of the Charter Party, and especially with those affecting the comfort and welfare of the Emigrants.

2. The Medicine Chest is supplied by the Apothecaries' Medicines Company. The Surgeon will see that the Medicines correspond with the List in the Chest and in the Charter Party (also given in Appendix No. 2, p. 29,) and arrange them in proper order, and secure them for going to sea. He will report in writing any deficiencies to the Emigration Officer and to this Board. He will also sign and transmit to the Board a Certificate of the quality and quantity of the Medicines, according to the form given in Appendix No. 28, p. 103. All the preparations in the Medicine Chest are made according to the Formula in the British Pharmacopœia. The Medicines are supplied according to the weights and measures prescribed by the Medical Council.

3. The Surgeon is to provide himself with the British Instruments. Pharmacopœia, published pursuant to the Medical Act of 1858, and with proper Surgical and Midwifery Instruments. A list of those absolutely necessary is placed in the Appendix No. 1, p. 28. Without these he cannot be allowed to proceed to sea.

4. He will take care that the Medical Comforts, the Hospital Furniture, and the various articles for the use of the Emigrants, enumerated in the Lists in Appendices Nos. 3, 4, 5, 6, and 7, are all put on board; and he will report any deficiencies in writing to the Emigration Officer, and, if necessary, to this Board. The articles specified in Scales Nos. 1 and 2, (Appendix 7), should be carefully put by and preserved in some place where they will be forthcoming as required for the Emigrants, for whose use alone they are intended.

5. He will also inspect the Cooking Apparatus, to see that it is complete, and that the various articles referred to in Scale 3, Appendix 7, are in their places and ready for use as required.

6. The Commissioners' Emigrant Ships always carry a Water Distilling Apparatus for converting salt water into fresh. denser. The apparatus at present sanctioned by Order in Council for the use of Passenger Ships are three; viz., those known as Normandy's, Winchester and Graveley's, and Chaplin's. Diagrams and a short description of each, with Instructions for their management, are placed in Appendix No. 16. Before the Ship sails the Surgeon will ascertain that the Distilling Apparatus and its appliances are all in good working order, and will make himself acquainted with the operation of the machine and its requirements. He will also take care to see that the man in charge understands his duties. Any

deficiency in the machine or its working is to be reported to the Emigration Officer, and made good before the Vessel proceeds to sea.

Books. 7. He will ascertain that the supply of books according to the List inserted in the Appendix No. 5, (p. 32), has been put on board for the use of the Emigrants, and give a receipt for them.

Bags of working materials. 8. He will see that the bags of working materials supplied for the use of the women and for the Hospital, marked respectively A. and B., are placed under the charge of the Matron. For Lists of contents of the bags, see Appendix, No 6, (p. 35).

Berths and bedding to be numbered. 9. He is to observe that the berths are duly numbered from one end of the ship to the other, and that the beds are rolled up and lashed, with the bedding inside of them, and numbered, and that the proper quantities of spare beds, bedding, and mess utensils, as specified in a Return (Appendix No. 30) (p. 105), with which he will be supplied, are on board. As explained at the foot of this Return, the unused surplus will be sold in the Colony. The mattresses for the married couples and single women should measure 6 ft. by 3 ft. wide, be filled with clean white cotton flock, and weigh 21 lbs. exclusive of the bolster. The mattresses and bolsters for single men should measure 6 ft. by 22 inches wide, and without the bolster should weigh about 15lbs. The blankets should measure 9 feet by 4 feet wide, and weigh $5\frac{1}{2}$ lbs. per pair.

Embarkation.

Duties on joining. 10. Many of the objects referred to in this portion of the Instructions are usually attended to before the Surgeon joins, or independently of him ; but they are here mentioned for his information and guidance in case it should fall upon him to carry them out.

11. On reaching the place of embarkation, the Surgeon Superintendent will put himself in communication with the Commissioners' Despatching Officer and with the Emigration Officer at the port, with whom, as long as the ship remains in port, the general superintendence of the arrangements will continue, and he will render his best co-operation in any way in which he may be called upon, or may be able to afford his services.

Medical Examination of Emigrants at Dépôt. 12. The Surgeon will carefully examine the people before they embark, and not allow any person to go on board the ship who may be suffering under any disease dangerous to others, or likely to be aggravated by the voyage. He will take pains at the Dépôt, and before the sailing of the ship, to make himself acquainted with the people and their cir-

cumstances, so far as is likely to be useful to him in his arrangements, especially at the early part of the voyage.

13. A List of the Berths, with the names of the parties by whom they are to be occupied, should be prepared beforehand, so that each Emigrant, on coming on board, can be directed at once to the number of his own berth. The people ought to be berthed according to their natural connexions, and so as to place in the neighbourhood of one another those whose relative circumstances and habits render it most likely that they will agree. Women advanced in pregnancy should be placed in the lower berths, and families with very young children should not be berthed immediately under the hatchways, nor near the hatch from which the provisions are served out. The names of the occupants should be affixed to each berth. The Surgeon will render every assistance in getting the Passengers comfortably settled on board as early as practicable.

14. A List of the Messes is made before the Emigrants embark, subject to revision subsequently, if found necessary. Each Mess should be provided with a card, to contain the names and ages of all the persons in it (Appendix, p. 50). A book containing a List of all the Messes, with the names of the Captains chosen for each, is supplied to the Surgeon after the people have been embarked.

15. In Appendices Nos. 21 to 25, inclusive, are placed the Instructions issued by the Commissioners for the guidance of the Chaplains, Schoolmasters, and Matrons appointed to their Emigrant Ships, and to the Master and Bakers.

Instructions to
Chaplains,
Schoolmasters,
&c., and to the
Master of the
Vessel.

16. The following documents, &c., for the information and use of the Surgeon, will reach him at the Dépôt, viz.:—

1. A copy of the Charter Party, including the Diet Scale to be used on the voyage.

2. A blank journal for general remarks.

3. A blank Medical Journal.

4. Two packets of Vaccine Virus, with a portion of it secured in capillary tubes.

5. Form of Certificate of state of health of the Emigrants, and of examination of Medicine Chest (Appendix No. 28, p. 103), to be signed and returned before leaving England. The Duplicate is to be handed to the Commissioners' Officer at the port of embarkation.

6. Three blank requisition Books for Wines, Spirits, &c., issued to the Emigrants as Medical Comforts.

7. A Form of Report to be filled up and despatched to the Commissioners immediately on arrival in the Colony (Appendix No. 34, p. 112).

8. A Form of Return of the receipt and issue of spare Beds,

Bedding, and Mess Utensils, to be filled up and delivered to the Immigration Agent at the end of the voyage. (Vide directions, Appendix to Instructions, No. 30, p. 105).

9. A list of provisions, &c., placed on board, with a column showing where they are stowed.

Size of Messes. 17. Owing to the various sizes of families, and the mixture of children of different ages, it is impossible to fix the same number for every Mess in an Emigrant Ship. It can only be said that, as a general rule, a Mess should not consist of less than six statute adults, nor of more than ten, counting each person of 12 years and upwards, and two children between the ages of 1 and 12, as an adult. In Appendix No. 10 (p. 46) is placed a scale for calculating the rations to be issued to a Mess of any size from 5 to 10 statute adults.

Manner in which the Messes should be constituted. 18. The order of the Messes ought to follow that of the berths, so that each Mess may consist of a certain number of contiguous berths.

Serving out and marking of the Mess Utensils. 19. The Surgeon, as soon as possible after the people are on board, should see that their Mess utensils are served out to them according to Scale No. 1 in Appendix No. 7 (page 36), and they should be instructed to mark them, if not already done, with the number of their respective Messes. He should also take care that the surplus articles of all kinds are carefully put away for the future use of the Emigrants as he may find necessary.

Uniformity of Provision Scales to be ascertained. 20. He should carefully ascertain that the Mess Book, Mess Cards, and Dietary and Ration Scales coincide as to the quantities and issues to be made, and agree with the dietary scale given in the Charter Party of the Vessel.

Constables. A Head man to each Mess. 21. An early opportunity should be taken of naming Constables, a Cook's Assistant (when there are as many as 150 Emigrants on board), and a Head man or Captain to each Mess, with whom the Surgeon Superintendent can more immediately communicate on all matters relating to it. Not more than one ordinary Constable for every 50 persons is to be appointed. One of the Constables should be specially appointed to look after and keep clean the waterclosets, using frequently the disinfecting fluid or agent. For this service, if performed efficiently and to the satisfaction of the Colonial Authorities, the Surgeon will be at liberty to recommend him for an extra gratuity, viz., 5*l.* instead of 2*l.* Besides the ordinary Constables, the Surgeon will appoint one Constable, who is to be either a married man or a married woman, for each three Messes of the single women. The duties of these Mess Constables will be to receive and to carry to and from the galley the provisions of the Mess, and to clean the Mess utensils after each meal. The object of this arrangement is to

Constables for the female Messes.

deprive the young women of any pretext for resorting to the galley or fore part of the ship. These appointments should be made in the first instance by the Surgeon in consultation with the Emigration Officer and Despatching Officer at the port of embarkation. The first appointments should be for 1½ days only, and this should be clearly explained to the parties, so as to prevent any disappointment should it become necessary afterwards to make a different selection. But after the Surgeon has had sufficient experience of the Emigrants to judge of their relative merits, he will make the appointments for the whole voyage, and make no further changes, except in case of misconduct, or for some other sufficient reason, which must be duly noted in his journal, and reported to the Colonial Government. For the remuneration of Constables, see Article 85, page 26.

22. Before the Emigrants go on board, the swing stoves should be frequently used, and the 'tween decks thoroughly dried, and their sleeping berths and bedding should be examined to see that they are dry and wholesome. *Swing Stoves, &c., before Embarkation.*

23. The luggage is to be put away into the hold, but in such manner that it may be accessible at least once in every three or four weeks, and that it is not necessary to go into the single women's apartment to get it up on deck. *Luggage to be put away into the Hold.*

24. Previous to departure, the Surgeon Superintendent, with the Emigration Officer, should muster all the Emigrants, and make a return in the form set forth in the Appendix No. 28 (page 103), accompanied by a certificate that there is no sickness among them, or a note of any which may appear to exist, and send it to the Commissioners by the last Pilot. *Muster of the Emigrants.*

25. A supply of fresh Vaccine Matter will be furnished to the Surgeon Superintendent at the latest moment before sailing. Measures are taken, in the course of selecting the people, to secure their vaccination ; but the Surgeon Superintendent should see their certificates that the operation has been performed, or examine their arms ; and he should perform it anew in any case that may seem to him doubtful. *Vaccine Matter and Vaccination.*

26. The Emigrants are to be maintained on Fresh Meat, Soft Bread, and Vegetables while in port, and whenever opportunity shall offer, according to the Dietary Scale. *Fresh Provisions in Port, &c.*

27. The Passengers ought, as a general rule, to have slept one or two nights on board before the ship puts finally to sea ; and the Master is not to sail without the clearing certificate of the Government Emigration Agent at the port of departure. Appendix No. 29 (page 104). *Sailing.*

28. The Surgeon Superintendent is expected to give the Master, Officers, and Crew the benefit of his medical assistance, if required. *Medical Attendance on the Crew.*

The Voyage.

Principal objects of the Surgeon Superintendent's duty during Voyage.

Discipline.

Appendix No. 11.

Corporal Punishment prohibited.

Conclusion on Discipline.

29. The principal objects of the Surgeon Superintendent's attention during the voyage will be the maintenance of good order and regularity among the people ; the management of the Dietary ; the care of the Sick ; and the keeping of a Journal which shall constitute a sufficient record of the proceedings on all these subjects.

30. It is impossible to overrate the importance of good order and proper discipline in an Emigrant Ship ; but, as before observed, the Surgeon's means of coercion are limited. He is not armed, nor can the Commissioners arm, him with any legal power to inflict direct and immediate punishment. The only authority which the Legislature has thought fit to confer on the Surgeon of an Emigrant Ship is given by the 60th section of the Passengers' Act, 1855. He is thereby empowered to exact obedience to all rules prescribed by any Order in Council issued under the 59th section of the Act, and any offender who shall neglect or refuse to obey any such rules, or who shall obstruct the Surgeon in the execution of his duty thereunder, or be guilty of riotous or insubordinate conduct, is subjected to a penalty not exceeding 2*l.*, and also to imprisonment not exceeding one month. But this punishment is available only on the termination of the voyage, and in the hands of magistrates on shore. Copies of the two sections of the Act, and of the Order in Council of the 7th January 1864 issued under it, are placed in Appendix No. 11. Under these circumstances the Surgeon should note down in writing at the time the particulars of any infringement of the Rules prescribed by the Order in Council which may appear to him sufficiently grave to deserve punishment at the end of the voyage, and he will submit the case, on his arrival, to the Colonial Authorities.

31. It is hardly necessary to state that corporal punishment on board must on no account be resorted to ; nor, as the Passengers' Act has enjoined the issue of a certain allowance of food to each passenger, can the Surgeon legally curtail that allowance as a means of coercion. He may, however, suspend or curtail the issue of any extra articles provided by the Commissioners under the Charter Party should the circumstances of the case appear to him to require that measure.

32. The Surgeon's main reliance, however, must be on judicious management and tact. He should begin as he intends to go on, bearing in mind that his best opportunity of establishing his influence and authority over the people is in the early days of the voyage, and that want of method, or a

lax discipline at first, is not easily remedied afterwards. It should be his aim throughout to maintain good moral conduct, cheerfulness, and regular habits, and by establishing fixed days and certain hours for as many purposes as he can, to endeavour to bring the whole of his system into a settled routine, capable of insensibly uniting itself with the daily life of the Emigrants as a matter of course.

33. The Surgeon, in case of need, can appeal to the Captain for his aid and co-operation in enforcing the requisite discipline on board, especially where the Crew are concerned. The law invests the Captain with large punitive powers over the Crew, and with larger powers over Passengers than have been confided to the Surgeon. He has full control over the passengers in all that is necessary for the safe and proper management of the vessel, and may restrain them by force if the safety of the ship or of those on board requires it. The exercise of this power, however, is limited by the necessity of the case, and for any excess beyond the bounds of moderation and justice the Captain would be liable in damages to the party aggrieved. Lastly, for the further repression of crime in ships, the 12 & 13 Vict. c. 96 (1849) provides that persons charged with piracy, robbery, murder, or other offence of what nature or kind soever, committed at sea, may be tried in any colony as if the offence had been committed within its jurisdiction, but the punishment on conviction must be that awarded by the law of England for the offence. The jurisdiction of the Supreme Courts of New South Wales and Tasmania, as established by the Act of 9 Geo. 4. c. 83., is left intact.

34. No unmarried female Emigrant is on any account to be allowed to act as servant or attendant to the Surgeon, Cabin Passengers, Captain, or Officers of the ship, or to enter their cabins. The Surgeon should bear in mind that one of his most important duties is the care of the morals and the protection of the single women, and he should prevent the association of single men and women who are not immediate members of the same family.

35. The Emigrants are not to be called upon to assist in any way in the navigation of the ship, or to act as servants to any one on board; neither are they to draw water or to get up fuel from the hold, or do work which should be performed by the Crew.

36. The Surgeon Superintendent will perceive that several of the Regulations are devoted to the object of enforcing Cleanliness amongst the Emigrants, in their persons, their decks, their sleeping-places, and their clothing. He will

Captain's
power of
coercion.

Act
12 & 13 Vict.,
c. 96.

therefore visit the between decks at least two or three times a day and with reference to the 3rd, 4th, 5th, 8th, and 9th articles of the Order in Council, page 53, two of these visits should take place immediately after breakfast and at night.

Clean Linen.

37. With reference especially to the cleanliness of person and clothing, a muster is appointed for Sunday. The Surgeon should also establish a practice among the people of putting on Clean Linen upon some other fixed day in the week besides ; as, for example, Thursday, which is the day kept for the purpose on board Her Majesty's ships of war ; and there should, if practicable, be a muster for inspection on that day.

Bathing.

The Emigrants should be encouraged to bathe as much as possible, the males in baths made of water casks in the fore part of the ship, and the females in the bath room prepared for their use. The Surgeon is requested to note in his journal the arrangements he may make for carrying out this object. He should take care to prevent indecency and practical jokes.

Ventilation.

38. Before the vessel sails every care will have been taken to provide proper means of ventilation ; but the practical result of whatever general arrangements may be adopted depends very much on the build of the ship and other circumstances, which can only be ascertained after the people have been embarked, and the vessel has been a few days at sea. The Surgeon will then ascertain whether there is the necessary purity of the atmosphere in the 'tween Decks or not ; and he is enjoined to use his best endeavors to remedy any defects he may observe before the vessel reaches the hot latitudes. The Commissioners' ships, besides other arrangements, are at present usually fitted with Dr. Edmonds' ventilating apparatus, the operation of which is described in Appendix 12, p. 56, to which the Surgeon is referred for further information respecting it. In addition to this mechanical contrivance, there are horizontal and vertical openings and windsails for the admission of air into the 'tween decks. The Surgeon will pay every attention to secure a proper and equable ventilation, especially at the extremities of the ship, where the impure air is likely to accumulate. Care must, of course, always be taken that the openings by which the sea could be admitted are securely and tightly closed whenever bad weather is apprehended.

Thermometer.

39. The state of the thermometer in different parts of the 'tween decks, and in the open air shade is to be observed two or three times a day, and recorded daily in the Surgeon's Journal.

Dryness be-
tween Decks.

40. Great care should be taken to preserve dryness between decks. For this purpose all washing must be strictly prohibited there, and holy stones and dry rubbing alone used to

clean the deck. The swing stoves and hot sand should be used frequently, and wherever damp may appear. The mode of using the sand is as follows:—a sufficient quantity is placed in the stoves, and heated to 200°, or as high as it will bear, and then spread on the deck to about one inch in thickness: when the object has been effected, the sand is to be put by for future use.

41. The Emigrants should have every encouragement to take the air on deck. The Surgeon Superintendent should promote Music, Dancing, and every harmless means of combining exercise and amusement. But the Officers and Crew of the ship are not to dance with the Emigrants or to associate with any of the single women. In the hot latitudes the people should have the benefit of the awnings, and should as much as possible be sheltered from the sun in all parts of the deck. In those latitudes, it will probably be also found desirable (although it is not enjoined as a Regulation) that the men should agree amongst themselves to keep large Watches on deck at night, so as to leave the sleeping places below more airy.

Officers, &c.
not to dance
with Emigrants.

Watches at
Night.

42. One safety candle lanthorn, with an ample supply of proper candles, is put on board for each 20 statute adults the ship can carry. These lanthorns are to be hung in the apartments of the Emigrants, and kept burning as the Surgeon may direct. The Queen's Order in Council, however, of the 7th of January 1864 (Article 9) requires at least six lamps in all to be lit at dusk, and kept burning till daylight. It prohibits (Article 10) the use of naked lights in the 'tween decks or in the hold, on any pretence. No infringement of this Regulation should on any account be allowed.

No naked
Lights.

43. The Emigrants are not to be molested on crossing the line.

Crossing the
Line.

44. No article whatever is to be sold on board, except tobacco, and that only with the written sanction of the Surgeon, and in quantities not exceeding two pounds for each adult male passenger during the voyage, at a price to be fixed by the Commissioners' Officer before sailing.

Sale of Articles
on board.
Tobacco.

45. Gambling, betting or smoking between decks, must on no account be permitted; but chess, drafts, dominoes, or games not played for stakes, need not be prevented unless they are found to occasion quarrels or annoyance to the other Passengers.

No Gambling
or Smoking
between Decks.

46. The Surgeon Superintendent will give the Religious Instructor or Teacher, as the case may be, every facility in the performance of his duties. And if one has not been previously appointed by the Commissioners or their Officer, he will select

School.

from amongst the Emigrants the fittest person he can for the office of Teacher, exempting him from the ordinary duties of the Emigrant. A copy of the Instructions furnished to Clergymen proceeding as Religious Instructors is placed in the Appendix No. 21. (page 81). The same instructions, with the exception of some slight modifications, are given to Certificated Teachers; but in those furnished to Teachers receiving only a steerage passage, the 6th clause calling upon him to read Divine Service is omitted, and the 9th clause is somewhat modified (see Appendix, p. 83). Much benefit has resulted to the Emigrants, adults as well as children, from the improvement of their education in ships, when proper facilities and encouragement have been afforded to them. Surgeons are therefore requested to devote their best attention to this important object.

Books.

47. The books (of which a List is given in Appendix No. 5. p. 32) are supplied for the benefit of the Emigrants. They will be found to consist chiefly of educational works with a small lending library. Books of the former class are to be distributed according to the demand for them, under the charge of the Head men of the respective Messes for whose use they are given out, and may be exchanged when done with. They should, however, be produced to the Surgeon Superintendent or to the Religious Instructor, where one has been appointed, by the several Head men at stated intervals (say every Saturday, or every alternate Saturday), to show that they are not lost or injured; and at the end of the voyage they may be disposed of as gifts to such of the Emigrants as may be considered most deserving of them, as is more fully explained in the Instructions of the Religious Instructor and of the Teacher. Every facility, consistent with the due preservation of the books, should be afforded to the Emigrants for the reading and exchange of books in the lending library. These books also are at the disposal of the Surgeon (unless there be a Religious Instructor on board), for distribution at the end of the voyage to the deserving Emigrants. The Surgeon Superintendent will make use of the services of the Teacher in the management of the books; and the school-books will remain under the Teacher's charge during the voyage.

Reading and Listening Classes.

48. It is desirable, in every point of view, that the minds of the Emigrants should be kept occupied as much as circumstances will admit, and it will be the duty of the Surgeon Superintendent, with the aid of the Teacher, to give as far as possible a profitable direction to their occupations and amusements. As one mode of effecting this, he will endeavour to

form reading and listening classes, in which those emigrants who can read most fluently should in turn be encouraged to read aloud to the rest when not otherwise employed. In short, every means of promoting cheerfulness and preventing lassitude and ennui amongst the Emigrants should be resorted to ; care being always taken to prevent the association during the voyage of single men and women who are not near relatives.

49. For the instruction in needlework and the employment Working Materials. of the young women, a supply of materials for work is put on board, under the charge of the Matron (see Appendix No. 6, p. 35). The articles made from these materials are under no pretext to be given away to any person on board, but an account of them must be kept by the Matron, and delivered up with the articles to the Immigration Agent on arrival in the colony.

50. Divine Service should be read every Sunday, weather Divine Service. permitting, by the Surgeon Superintendent, unless there be a Clergyman on board, or a Teacher authorized by his Instructions, or called upon by the Surgeon, to undertake the duty. And in case there be any persons who absent themselves from the assembly of the people for this purpose, on the plea of difference of persuasion, or for any other cause, care is to be taken to prevent the commission of irregularities and improprieties by them at the time the attention of the remainder of the Passengers is engaged at Church. The Commissioners have had prepared short forms of Morning and Evening Prayers (of which some copies are included in the supply of books) ; and the Emigrants, or at least the Protestant portion of them, should be afforded every facility and encouragement for using them daily at set hours. The minority are to have all reasonable facilities for the performance of Divine Worship at times which do not interfere with the exercise of that duty by the majority of the persons on board.

51. As soon as the single women have gone below for the night, the Matron will lock the door of the apartment and keep the key, unless the Surgeon should think proper to require her in writing to deliver it over to his custody ; or he may cause a second lock to be placed on the outside of the apartment, the key of which he may retain in his own possession. In either case he will make a full record in his journal of his reasons for the course he may adopt.

52. The Surgeon Superintendent is to endeavour to prevent any of the Emigrants from landing at an intermediate port with a view to settling in the country. He has, however, no legal power forcibly to detain any one who insists on taking advantage of any opportunity that may present itself for going on shore.

Morning and
Evening
Prayers.

Key of Single
Women's
Apartment.

Landing at
Intermediate
Ports.

When Surgeon
may appoint
Schoolmaster
and Matron.

53. In case the Commissioners shall not have appointed a Schoolmaster, or a Matron, where one is required, from the number of single females, the Surgeon will be at liberty to select from the Emigrants a proper person to fill each of these offices. He will also be at liberty, where the Commissioners have appointed a Schoolmaster, Hospital Assistant, Constable, Matron, or Sub-Matrons who may prove unfit for their duties, to replace them by others more competent, being careful to note in his journal the grounds on which he has proceeded.

Dietary.

54. With regard to the Dietary, the Surgeon Superintendent will find in the Appendix No. 8 (page 42) a copy of the Scale of Victualling according to which the supplies for the ship are laid in. To this document are added a few hints respecting the Dietary of Emigrants at sea, a subject to which the Surgeon's special attention should be directed. Appendix No. 9 (page 44). Every care must be taken properly to regulate the diet of young children and of aged persons, for which purpose some of the articles of medical comforts may be made use of as far as necessary. The wines and spirits, &c. are to be issued only on a written requisition upon the Master (see Appendix No. 3, page 31). It will be observed that provision is made in the Diet Scale for a daily issue of half a pint of preserved milk to young children. But as all the young children may not require this issue, the Surgeon will be at liberty to apply the allowance of those who do not need it for the benefit of those who do.

Fresh Bread.

55. The Commissioners' ships are fitted with an Oven and small Bakery, with a view of supplying the Emigrants with soft bread, as a portion of their diet during the voyage. The bread is to be baked three times a-week, on Mondays, Thursdays, and Saturdays. It is not to be issued on the day it is baked, but on the succeeding day. For each baking the day's allowance of flour—that is, 8 oz. per adult—is to be withheld from each adult. The people will receive on the remaining four days of the week their 8 oz. of flour in its raw state, to be used in puddings, or any other way they may think fit.

It devolves on the Surgeon to fix upon six consecutive hours, on each of the four days not devoted to the baking of bread, during which the oven is to be kept ready for cooking any food prepared by the Emigrants, and to give proper notice of the same to the people.

Subject to the General Instructions given by the Commissioners to the baker, a copy of which is placed in Appendix No. 24 (page 85), the Surgeon will make such regulations in writing as may prevent disappointment and disputes amongst the Emigrants, and secure to them the most advantageous use of the oven in the preparation of their food.

Issue of Milk
to young
Children.

56. The Surgeon Superintendent is to take care that the Emigrants have their allowance of provisions and of water, without any deduction whatever (unless as ordered by himself under any of the following clauses of these instructions), in the same quantities and at the same times as are stated in the Dietary Scale ;—that convenient times are appointed for serving out to them their daily and weekly rations ;—that the provisions are not served out in the single women's apartment ;—that the victuals are properly cooked, and in the manner to turn them to the best account for the Emigrants, without any artifice to increase the cook's perquisites ; and, especially, that the meals are served with punctuality, in which respect any habitual failure is to be reported to the Colonial Authorities on arrival, with reference to its bearing on the claim of the Master and Officers for gratuities.

57. The water to be served out to the Emigrants is, as far as possible, to be that produced by the water distilling apparatus which is placed on board the Commissioners' ships. Water from the casks or tanks is to be used only to make up any deficiencies in the supply. In the Tropics the Surgeon will, if circumstances admit of it, issue a larger allowance for drinking purposes. The water is not to be served out in the 'tween decks. The Emigrants, out of their allowance of three quarts per diem, must provide the water for their tea and coffee, and the ship must provide the necessary water for making the bread, and cooking the meat, flour, rice, oatmeal, potatoes, and peas, which are all required by law to be issued to the Passengers in a cooked state. The Passengers must provide the water for pea soup, and any other soup the Surgeon may direct to be prepared for them, out of their allowance.

58. The Surgeon will carefully inquire into all well grounded complaints respecting the quality or issues of the Emigrants' provisions and water, and note the result in his journal. The brands and marks of all objectionable provisions, with the nature of the objections, are also to be duly noted.

59. If the Surgeon Superintendent finds that the attendance of the Constables only at the serving out of the provisions gives rise to jealousies, he may try the plan of taking two men daily (one from each of every two Messes in rotation) to be present at the issuing ; but so frequent a change of persons is not in itself desirable, and is by no means equally convenient with the continued employment of the same parties, who become familiarized with the weights and measures and methods of proceeding.

60. Should the vessel be forced, from any cause, to put into a foreign port, the Surgeon should at once report himself to

Consular Assistance in Foreign Ports.

the British Consul, from whom he will obtain any assistance or advice he may require.

Reports of
Progress of
the Ship.

61. The Surgeon Superintendent is expected, without fail, to take advantage of every favourable opportunity of reporting the progress of the ship, and the state of the people on board ; and to furnish a Return of any Deaths which may have occurred, with the dates, the names and ages of the parties, and the cause of death.

Disease.

62. For the prevention and cure of disease, the main reliance must be placed on the general skill and knowledge of the Surgeon Superintendent ; but a few directions are subjoined, taken, with very little alteration, from clauses in the " Naval Instructions " to Surgeons of the Fleet, and Surgeons employed in Convict Ships.

Prevention.

63. The Surgeon Superintendent will keep a watchful eye on the health of the Emigrants, with a view to discover the earliest symptoms of Fever, Flux, Scurvy, or any other complaint, and in order that he may take the most prompt means to stop the progress of disease amongst them.

Disinfectants
and their use.

64. A supply of Disinfecting Fluid is put on board, and in the Appendices Nos. 14 and 15 (pages 65 and 66) will be found directions for its use. In the Appendix No. 13 will be found extracts from the Reports of Dr. Angus Smith and Mr. Crookes to the Cattle Plague Commissioners which contain some valuable information relative to Disinfection and the use of agents for the purpose.

Isolation of
Sick, &c., in
infectious or
contagious
Diseases.

65. If any disease usually considered infectious or contagious should break out on board the ship, the Surgeon will take immediate measures for separating the sick and their attendants from the rest of the Passengers, and for preventing the spread of disease amongst them. The means resorted to with success by one of the Commissioners' Surgeons when Small Pox appeared in his ship will be found in Appendix No. 18.

Infection.

66. When patients with infectious disorders have been received into Hospital, their persons are to be thoroughly cleansed, and their clothing washed in boiling water, or fumigated, before it is stowed away, or if necessary destroyed, to prevent the possibility of infection.

Visiting the
Sick.

67. He is to visit the sick at least twice a-day, and oftener if necessary, paying every attention to their nursing, medical treatment, and general comfort ; and assigning to them the most suitable Diet, as provided for in Article 70.

Visiting Single
Women.

68. As a measure of precaution, the Surgeon when visiting single women professionally is to attend them in the Female Hospital or their own berths ; but in either case the visit is to be made in the presence of the Matron, or of some discreet married woman.

69. He is to take particular care that medicines and proper drink be provided for the sick every evening in sufficient quantities to serve until morning.

Their Medicines and Drink.

70. The Sick will be victualled according to the discretion of the Surgeon Superintendent, who is at liberty to cause to be issued to them, in addition to the medical comforts required for their use, the whole or any part of their regular rations, or any other of the articles furnished by the scale of victualling, as he may deem best.

71. The Hospital being intended chiefly for patients labouring under such diseases as render confinement to bed necessary, the Surgeon is not to admit into it persons affected with slight complaints, but is to attend to them in their own berths.

72. The Surgeon Superintendent is at liberty to appoint an Hospital Assistant, if required, but this will be more immediately for his own assistance. In cases of extensive illness, as many persons as are necessary must be taken out of the Emigrants who are in health to attend upon those who are sick. The Surgeon will see that every sick person who requires it has the attendance of a proper nurse.

73. In the event of any one falling overboard and being picked up in an exhausted state, attention is called to Dr. Henry Sylvester's method of inducing respiration in cases of suspended animation. His mode of treatment will be found described in Appendix No. 20.

Treatment of persons rescued from drowning.

74. Although the Commissioners do not hold themselves in any way responsible for the effects of Emigrants who may die on board, yet, in the absence of any near relative, such as a husband or wife, parent, brother or sister, the Surgeon will endeavour to secure the property for the benefit of the relatives of the deceased who may be entitled to it.

Appendix No. 20.

Property of

Emigrants who may die on the voyage.

With this view he will, if practicable, ascertain what property, both in money and effects, any dying person may possess, and, if they are intestate, the names and address of their nearest relations. In case of death, the Surgeon will immediately (and if possible in the presence of the Captain) collect together the property of the deceased, and make an inventory of it (which should also be entered in his Journal), and give the property and a copy of the inventory in charge of the Captain, taking his receipt for them.

On arrival in the Colony, the Surgeon will deliver in his copy of the inventory, and such receipt to the Government Immigration Agent, together with such information as may have been collected respecting the proper disposal of the property. Unless the persons for whom the property is intended

reside in the Colony, the Surgeon will request that officer to dispose of the clothes and effects to the best advantage, and to forward to this Board the proceeds and any money that may have been left, together with the names and addresses of the deceased Emigrant's relatives in England.

Navigation of the Ship.

75. The Surgeon will not interfere in any way with the navigation of the ship ; but he will note daily the latitude and longitude at noon. Between the 1st of April and the 1st of October the Ship is not to be navigated in a latitude higher than 47° south ; nor, between the 2nd of October and the 31st of March, both inclusive, in a latitude higher than 53° south. If, however, on the approach of the ship to these high latitudes, the Surgeon finds the health of the Passengers to be endangered by the cold, he will not fail to make a proper representation to the Captain on the subject.

Health of Passengers in high latitudes.

Ages of Emigrants who die to be correctly given.

76. In the "Certificate" to be given by the Surgeon to the Master at the end of the voyage, the Surgeon will be careful that the ages of the Emigrants who may have died on board correspond with those in the List furnished to him on leaving England. Any discrepancy on this point leads to serious inconvenience, and should be explained on the document itself, if it occurs.

Co-operation of Master and Officers.

77. The Surgeon Superintendent is to do his best to obtain the cordial co-operation of the Master and Officers, in order that by their united exertions the service may be performed in the most efficient manner possible. The Instructions to the Master will be seen in Appendix No. 25 (page 86). Should any difference unfortunately occur on any point between the Surgeon and the Captain, the Surgeon will communicate in writing any request he may have to make in the matter, and will enter in his Journal a copy of his letter and of the Captain's answer.

Journal of the Voyage.

78. In reference to all the preceding duties on the voyage, the Surgeon Superintendent is to keep a daily Journal of his proceedings, noting therein every event of moment at the time of its occurrence. In addition to the matters which he is expressly required by these Instructions to record, he will enter the dates when the decks are scraped and holy-stoned, &c. ; the ship fumigated ; the bottom boards of the berths scrubbed, and taken on deck ; the bedding shaken and aired ; the bathing-days and washing-days ; the luggage brought up, and the spare beds, bedding, and mess utensils issued, with the number issued of each, and the reason of their issue. He is also to notice the Sunday and other musters ; and is to state, every day, the nature of the weather and the latitude and longitude. The crossing of the Tropics and of the Line

should be noticed. He will enter in this Journal any remarkable instances of the good or bad conduct of the people, or of the working of the Regulations for their discipline; and from time to time report the state of the Schools, and the progress of Education among the Emigrants, and copies of any subsidiary Regulations he may establish, and of any letters he may write or receive on service. At the end of the Journal he will place together all his general observations on the voyage, expressing every objection he may see reason to form to the Regulations, or to the Victualling, or any other part of the arrangements, and taking care to name the remedy he would propose. As some guide to Surgeons who have not previously been at sea in charge of Emigrants, an outline of a Journal for a portion of the voyage is annexed in Appendix No. 31, page 106, by way of specimen. A Return is to be made, on the concluding page of the Journal, in the Form contained in the Appendix No. 33 (page 111), of the principal Dates of the Voyage, and of the Number of Emigrants embarked and disembarked.

79. Independently of the preceding general diary, the Medical Surgeon Superintendent should keep a distinct Medical Journal, showing on what day each patient is entered for treatment, and on what day discharged; and whether cured, transferred to other hands, or dead; stating also the nature of the disease, and the method of treatment: and if there be any causes connected with the voyage which appear likely to have occasioned the disease, he is to assign them, and point out whether there seems to him any practicable method of obviating them for the future, more especially if the complaint be of an infectious nature; and he will make a weekly abstract of the same, showing the names and numbers of the sick, and their disorders during the week, according to the Form contained in the Appendix No. 33 (page 111).

Arrival.

Report arrival
in the Colony
to Colonial
Secretary.

80. Immediately on reaching his destination the Surgeon Superintendent will report his arrival to the Colonial Secretary or Immigration Agent. But during the time the Emigrants are entitled to remain on board the vessel under the Charter Party, or contract, the Surgeon Superintendent is to remain with them and continue in the discharge of his duties.

Report ditto
to the Com-
missioners.

81. It is of great importance that the Commissioners should receive at the earliest moment some account of the principal events of the voyage; but as the Surgeon's Journal must necessarily be detained for some time in the Colony for examination, he will not fail to send home to the Board, by the first opportunity, a Summary of the most interesting facts and occurrences, together with any general observations and suggestions which he may wish to bring under notice. This Summary need not extend beyond the compass of a folio sheet; and with a view to uniformity and facility of comparison with other reports, it will be convenient that it should be classified under separate headings, and be rendered according to the Form contained in Appendix No. 34, page 112. To ensure proper attention to the important duty of reporting to England, the Surgeon Superintendent is enjoined to deliver a duplicate of the above-mentioned Summary into the Colonial Secretary's Office, for transmission to England, and to take a receipt for the same; and he will be subject to the withholding of part of his gratuity until it shall appear that he has punctually complied with the present Regulation.

Transmission
of Journals.

82. The Surgeon Superintendent will also deliver into the Colonial Secretary's Office his Journal of the Voyage and Medical Journal, described in Articles 78 and 79, and will take a receipt for them, without which he is not to receive his remuneration. He will at the same time deliver up the Counterfoils of the Requisition Books mentioned in Appendix No. 3, page 31.

Surgeons going
on to India for
the Coolie
Service.

83. If the Surgeon, after his duties are brought to a close, proceeds to India in quest of an engagement in the Coolie Emigration to the West Indies, he will, under an arrangement effected at the instance of the Commissioners, be preferentially employed by the West India Emigration Agents, in whose hands the Medical appointments to the Coolie ships are vested; and if appointed, the voyage will count and be paid for as one made in the Commissioners' service.

Appendix
No. 27.

A copy of the Instructions given by the Indian Emigration Agents to their Medical Officers is placed in Appendix No. 27. The attention of Surgeons proceeding for the first time in charge of Indian Emigrants is called to the extract given in Appendix No. 19, from the Journal of Mr. Macdonald, one of the Commissioners' Surgeons, while on his voyage to British Guiana in the Ship "Utopia" in 1861-2.

Appendix
No. 19.

Remuneration and Gratuities.

84. The Commissioners engage their Surgeons Superintendent by the voyage, and do not pledge themselves to a re-appointment. As a general rule, however, they give a preference to those gentlemen who have already been at sea in their service, and have discharged their duties in a satisfactory manner.

The Surgeon's remuneration consists of a payment per head on the Emigrants landed alive. This payment increases in proportion to the number of voyages made by the Surgeon in the service of the Board, according to the following scale.*

For the 1st and 2nd voyages 10s. per head.

„	3rd „	4th „	12s.	„
„	5th „	6th „	14s.	„
„	7th „	8th „	16s.	„
„	9th „	10th „	18s.	„
„	11th and subsequent	20s.	„	

Where, however, there are more than 400 Passengers in the Ship, or where two Surgeons are appointed, the payment will be a gross sum to be fixed by the Commissioners, and not a rate per head. In every case the payment will be contingent on the good conduct of the Surgeon, and on the Colonial Government being satisfied that he has discharged his duties zealously and efficiently.

In addition to the above remuneration, the Surgeon will receive a free cabin passage outwards, with suitable diet at the Captain's table, including not more than a pint of wine and a bottle of malt liquor daily. He will also be allowed 40 cubical feet of space in the hold for luggage; but no member of his family, if accompanying him, will be entitled to the benefit of this arrangement. Towards the expense of his return passage from Australasia to England, he will be allowed the sum of 60*l.*, subject to the following conditions:—

1. That he returns to England, and makes application for it at the Office of the Commissioners within nine months of the day on which the ship arrives in the Colony to which she is bound.
2. That he produces satisfactory Certificates from the Colonial Government, of having discharged his duties on the voyage out in an efficient manner;—and
3. That his conduct throughout has been unexceptionable.

* This scale applies only to voyages to Australia. To the Cape (when the Commissioners are sending ships to that colony), besides the free Cabin passage, diet at the Captain's table, and space for luggage as above, the gratuity is 7*s.* a head for the 1st and 2d voyages,—8*s.* for the 3d and 4th,—9*s.* for the 5th and 6th, and 10*s.* for the 7th and subsequent voyages. The back passage allowance is 30*l.*, and the time for claiming it is limited to six calendar months after arrival in the Colony.

Should, however, the Surgeon not return direct to England, but go on to India or China, and be placed in charge of Government Emigrants from thence to the British West Indies, the allowance towards his back passage to England from the West Indies will be 30*l.*, instead of 60*l.*, and the time for claiming it in England will be extended from nine to twelve months after his arrival in Australia.

The Commissioners can make no advances for the outfit of Surgeons, nor can pensions or compensations for losses of any kind be granted to them or their families.

85. The following are the gratuities of which the Surgeon is authorized to recommend payment in case the various persons perform their duties efficiently and to his satisfaction, viz.:—

	£
The Schoolmaster - - -	not exceeding 5
The Matron - - -	5
The Sub-Matrons (each)	2
The Cook - - -	5
The Cook's Assistant - - -	3
The Hospital Assistant (if any)	3
The Baker - - -	3
The Watercloset Constable - - -	5
The ordinary and female Mess } Constables (each) - - -	2

86. A sum not exceeding 4*s.* a head on all the Emigrants landed in the Colony will be distributed by way of gratuity between the Master and Officers of the ship, in such proportions as the Governor may think fit, provided he is satisfied that those officers respectively have done their duty, and have, by their attention and humane conduct, promoted as far as lay in their power the welfare and comfort of the Emigrants.

87. The Surgeon's correspondence with this Board should be addressed to "The Emigration Commissioners, Park Street, Westminster, London, S.W."

By order of the Board,
S. WALCOTT.

*Government Emigration Board,
8, Park Street, Westminster, August 1866.*

Gratuities to
Emigrants
who discharge
useful Offices
on board the
Ship.

Letters upon
Service.

APPENDIX

TO

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APPENDIX No. 1.

LIST OF SURGICAL AND MIDWIFERY INSTRUMENTS WHICH THE SURGEON SUPERINTENDENT MUST POSSESS.

**Surgical and
Midwifery
Instruments.**

- A pocket Dressing Case, containing Scalpel, two Bistouries (blunt-pointed and sharp), Gum Lancet, Tenaculum, Forceps, Spatula, Scissors, two Probes, Silver Director, Caustic Case, Curved Needles of different sizes.
- Lancet Case with at least Four Lancets.
- Case of Tooth Instruments.
- Midwifery Forceps and Trachea Tube.
- Set of Silver and Gum-elastic Catheters, including Female Catheter and some Bougies.
- One Amputating Knife and Catlin, one Amputating Saw, one Hey's Saw, Tourniquet.
- Cupping Apparatus.
- Silk of different sizes for Ligatures and Sutures.

DESIRABLE ADDITIONS.

**Desirable
Additions.**

- Trocar and Canula.
- Trephine and Elevator.
- Craniotomy Forceps, Perforator, and Blunt Hook.

N.B.—The Surgeon should be provided with the British Pharmacopœia, published by Authority of the Medical Council.

APPENDIX No. 2.

LIST OF MEDICINES, &c., REQUIRED TO BE PUT ON BOARD FOR
EVERY 100 PERSONS. [March 1856.]

The Medicines, &c., are procured from the Apothecaries' Hall. All the Medicines are put in Stopper Bottles, and the Ointments in tins. All the poisonous articles are legibly marked "Poisons." Where more than 16 oz. of an article are required it is supplied in two vessels, one for use and the other for store:—

lb. oz.		lb. oz.	
0 6	Acid Acetic.	0 8	Ol. Lini.
0 1½	" Citric.	0 1	" Menth. Pip.
0 0½	" Gallic.	0 0½	" Anethi.
0 0½	" Hydrocyanic. Dil. Ph. Brit. plainly marked " POISON."	0 0¼	" Anisi.
0 1½	" Hydrochlor.	2 0	" Oliva.
0 1½	" Nitric Fort. Carefully packed in,	4 0	" Ricini.
0 2	" Dil. small case	0 10	" Terebinth.
0 10	" Sulphur Dil. with sand.	0 0½	" Croton.
2 0	" Tartaric (Pulv.)	4 0	" Morrhuæ.
0 6	Ammon. Carb.	1 4	Oxymel Scillæ.
0 10	Hydrochlor.	0 2	Pil. Hydrarg.
0 12	Amylum.	0 0¼	Calomel Comp.
0 0½	Antimon. Tartra.	0 2	Plumbi Acetas.
0 0½	Argenti Nitratas.	0 6	Potassa Bicarbonas (Pulv.)
0 0½	Assafœtida.	0 2	Potassii Iodidum.
0 1	Borax (Pulv.)	0 12	Pulv. Acaciae Gummi.
0 2	Calomelas.	0 6	" Aluminis.
0 6	Calx (Recens.)	0 0½	" Antimonialis.
0 4½	Camphor.	0 1	" Aromat.
0 2	Chloroform.	0 1	" Catechu Comp.
0 6	Conf. Sennæ.	0 2	" Cretæ Aromat.
0 6	Copaiba.	0 2	" Ipecac.
0 0½	Creosotum.	0 2	" c. Opio.
2 0	Crete præp.	0 4	" Jalapæ.
0 0½	Cupri Sulph.	0 1½	" Kino c. Opio.
0 0½	Ergote (Pulv.)	0 0½	" Opii.
0 2	Emplast. Cantharid.	0 6	" Potassæ Nitrat.
0 2	" Lythargyri.	0 6	" Tartras. Acid.
0 2	Resinæ.	0 6	" Rhei.
0 0½	Ext. Aloes.	0 0½	" Scammonii Comp.
0 0½	" Belladonnæ.	0 3	" Zingiberis.
0 4	" Coloc. Comp.	0 1½	Quinas Sulph.
0 0½	" Conii.	0 4	Quassia.
0 0½	" Hyoscyam.	0 0½	Saponis Dur.
0 1	" Opii.	0 0½	Santonine.
0 1	Ferri Sulph.	0 8	Sennæ Fol.
0 8	Gentianæ incis.	3 0	Soda Bicarbonas (Pulv.)
0 4	Glycerine.	0 6	et Potassæ Tart. (Pulv.)
0 2	Hydrarg. Ammoniat.	0 4	Sp. Ætheris.
0 1	" c. Cretâ.	0 10	" Nitrosi.
0 0½	Iodium.	0 10	" Ammon. Arom.
1 4	Liniment. Saponis.	0 10	" Tenuior.
0 8	Liquor Ammoniæ.	0 6	Syrupus Ferri Iodidi.
0 4	" Plumbi Subacet.	0 12	Sulphur Sublim.
0 2	" Potassæ.	0 6	Tinet. Camph. c. Opio.
14 0	Magnesia Sulph.	1 4	" Card. Comp.
0 4	" Carb.	0 12	" Catechu.
0 0½	Morphiaæ Hydrochlor.	0 0½	" Digitalis.
		0 3	" Ferri Perchloridi.
		0 4	" Hyoscyam.

lb.	oz.	
0	4	Tinct. Kino.
0	8	" Opii.
1	0	" Rhei.
0	2	" Scillæ.
0	8	" Sennæ.
0	4	" Valerianaë Ammoniat.
0	6	Unguent. Calaminæ.
1	0	" Cetacei.
0	3	" Hydrarg.
0	1	" Hyd. Nit.
0	1	" Oxidi Rubri.
0	6	" Resinæ.
1	0	" Sulphur.
0	2 $\frac{1}{4}$	" Zinci Oxid.
0	1	Vini Colchici.
0	8	" Ipecac.
0	1	Zinci Sulphat.
1	0	Lard.
8	0	Linseed Meal.
1	0	Lint, Best.
2	0	Tow, Common.
2	0	" Fine.
2		galls. Chloride of Zinc.
$\frac{1}{2}$		cwt. Chloride of Lime.
$\frac{1}{2}$		cwt. Disinfecting Powder.
2		galls. Alkaline Permanganatis (Condy's preparation).
2		yds. Emplast. Resinæ.

Two sets for the ship.

- 1 Male Syringe (one glass).
- 1 Female ditto.
- 1 2-oz. graduated Glass Measure.
- 1 Minim Glass.
- 1 Bolus Knife.
- 6 Dozen assorted green flat Phials.
- 1 Gross Phial Corks.

lb.	oz.	
6		Yds. Flannel.
12		Yds. Calico.
4		Sponges.
1		Bed Pan.
1		Paper of Pins.
2		Pieces Filleting, for Bandages, Bleeding, &c.
1		Truss for Hernia, (Right and Left).
2		Papers of Pill Boxes.
3		Dozen Gallipots (assorted).
2		Quires of Paper, for putting up Medicines.
500		Blank Adhesive Labels.
		One set for the ship.
1 $\frac{1}{2}$		Yard India-rubber cloth.
$\frac{1}{2}$		Yard of Oil Silk.
$\frac{1}{2}$		Square Yard of Markwick's Spongio Piline.
1		Complete Set of Cline's Splints.
1		Double action Enema Apparatus.
1		Bleeding Porringer.
1		4-oz. Syringe.
1		Set of Copper Scales and Weights, $\frac{1}{4}$ lb. to $\frac{1}{2}$ oz.
1		Box of Small Scales and Weights.
2		Wedgwood Mortars and Pestles.
1		Funnel.
1		Iron Mortar and Pestle.
1		Pair of Scissors.
2		Skins of Leather.
1		Pill Tile.
1		Tin Bath.
4		Saucepans of different sizes, for the exclusive use of the Hos- pital.

APPENDIX No. 3.

MEDICAL COMFORTS. [March 1866.]

The supply of Medical Comforts put on board is in the following proportion to every 100 statute adults :—

- 28 lbs. of Carolina rice.
- 20 $\frac{1}{2}$ -lb. packets of best prepared oatmeal grits.
- 35 lbs of best West India arrow-root.
- 30 lbs. of Scotch barley.
- 25 lbs. of sago.
- 10 lbs. of tapioca.
- 25 lbs. of best preserved meat soup }
25 lbs. of best preserved beef tea } in 1-lb. tins.
25 lbs. of preserved broth }
- 10 lbs. of preserved chicken broth in $\frac{1}{2}$ -lb tins.
- 40 lbs. of preserved boiled mutton and beef, half in 1-lb. and the remainder in $\frac{1}{2}$ -lb. tins.
- 25 lbs. of Grimwade's Desiccated Milk in 5-oz. bottles.
- 400 lbs. of loaf sugar.
- 36 bottles of port wine }
18 bottles of sherry wine } in quart bottles.
1 gallon of gin }
- 5 gallons of brandy.
- 5 gallons of vinegar.
- 6 pints methylated spirits of wine.
- 88 gallons of approved stout, being of a not less specific gravity than 1·095, one half in imperial pint bottles, the rest in 9-gallon casks.
- Sufficient malt and hops, or such other material for leavening bread on the voyage as the Commissioners may approve.
- 3 cwt. of Braham's Excelsior Soap.
- $\frac{1}{2}$ cwt of best yellow soap.
- $\frac{1}{2}$ bushel quicklime in cask.

The Emigrants have no right to the medical comforts as to the articles of dietary, but they are to be issued for their exclusive use at the discretion of the Surgeon, whether for the sick or to preserve health.

The malt Liquor, Wine, and Spirits, however, when required, are to be issued daily, and on the written requisition of the Surgeon upon the Master; such Requisition to specify the Patient for whom the issue is required, and the quantity in each case. A Book containing the Forms in which these Requisitions are to be made is provided for the use of the Surgeon, who is required carefully to fill up the Counterfoils with the Names, Articles, and Quantities inserted in the original demands. The Counterfoils are to be delivered at the end of the voyage, with the Surgeon's Journal, to the Colonial Secretary.

Wines and
Spirits, &c.
issued only on
Surgeon's de-
mand from a
Requisition
Book.

APPENDIX No. 4.

Bedding and other Articles to be provided for the Emigrants.

The Commissioners provide their emigrants with new mattresses, bolsters, blankets, and counterpanes, and with canvas bags to contain one month's linen, &c.; also with a knife and fork, two spoons, a metal plate, and a drinking mug, the whole of which articles, including the bedding, are to be given to the Emigrants after arrival in the Colony, provided they behave well on the voyage. [For size and weight of the mattresses, bolsters, and blankets, see Article 9, page 8.]

APPENDIX No. 5.

List of Books, Maps, Tablets, Stationery, Educational Materials, and Apparatus supplied to the Emigration Commissioners' Ships [March 1866.]

No. of Copies.	
1	Bunyan's Pilgrim's Progress, 32mo.
1	Doddridge's Rise and Progress, 18mo.
1	Law's Serious Call, 32mo.
1	Learn to Live, 18mo.
1	Learn to Die, 18mo.
1	Imitation of Christ, 18mo.
1	Sherlock's Practical Christian, 18mo.
1	Taylor's Golden Grove, 18mo.
1	" Death, Judgment, &c., 18mo.
1	Trimmer's Scripture Lessons, 12mo.
1	" Catechism, 12mo.
1	Life of Leighton, 18mo, $\frac{1}{2}$ roan.
1	" Bunyan, 18mo, $\frac{1}{2}$ roan.
1	" Baxter, 18mo, $\frac{1}{2}$ roan.
2	Lessons on Christianity, 18mo.
1	Manners and Customs of the Jews, 18mo, $\frac{1}{2}$ roan.
1	Life of Abraham, 18mo.
1	" and Travels of St. Paul, 18mo.
6	Church Catechism, 18mo.
1	Burns's Poetical Works, 8vo.
1	Selections from British Poets, 2 vols.
2	Garland, 18mo.
1	Biographies of British Poets, 12mo.
1	Life of Wellington, 12mo.
1	" Nelson, 12mo.
1	Walton's Lives, 12mo.
1	Tales of a Grandfather, royal 8vo.
1	Kings of England, 18mo (Mozley).
1	Columbus Discovery of America, 18mo.
1	Cook's Voyages, 18mo.

No. of Copies.	
1	Travels of Mungo Park.
1	Bligh's Voyages, 18mo.
1	Anson's Voyages.
1	Natural History of Beasts, 18mo.
1	Natural History of Birds, 18mo.
1	" Insects, 18mo.
1	" Reptiles, 18mo.
1	" Trees, 18mo.
1	Nature Displayed.
1	Labour Stands on Golden Feet.
1	Moralities for Home, 18mo.
1	Robinson Crusoe.
1	Vicar of Wakefield.
1	Lamb's Tales from Shakspere.
1	Useful Arts.
1	History of the Robins.
1	Cottage Cookery, by Esther Copley.
1	Lord Ashburton on Common Things.
1	Young Emigrants, &c., 18mo.
1	Ship and the Island, Halcyon Days, &c., 18mo.
1	Children and the Sage, &c., 18mo.
1	Prophet and the Lost City, &c., 18mo.
1	Seeker and Finder, Home at Haven, &c., 18mo.
1	Rising and Thriving, Self Helpers, &c., 18mo.
1	Story of Wellington, Uncle Tom, &c., 18mo.
1	Round the World, Irish Emigrants, &c., 18mo.
1	Mills's Guide to the Tool Chest.
1	Treatise on Poultry, 12mo.
1	Kingston's Emigrant's Home.
1	Cultivation of Arable Land, 12mo.
1	Dawes's Suggestive Hints, 12mo.
1	" Phenomena of Industrial Life, 12mo.
1	Campbell's Farmers' and Cottagers' Guide, 12mo.
1	Blacklock's Treatise on Sheep, 18mo.
1	Set of Alphabets on Cards.
2	Round Rulers.
1	Substitute for Black Board.
1	Box of White Chalk.
6	Quires Foolscap Paper.
$\frac{1}{4}$	Hundred Quill Pens.
48	Unframed Slates, $9\frac{1}{2} \times 7$.
500	Slate Pencils.
50	Copy Books, with Engraved Head Lines.
144	" ruled, small, round, and large.
36	" " single lines.
2	Gross Medium Pens.
4	Dozen Penholders.
25	Lead Pencils.

1	Travels of Mungo Park.
1	Bligh's Voyages, 18mo.
1	Anson's Voyages.
1	Natural History of Beasts, 18mo.
1	Natural History of Birds, 18mo.
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1	History of the Robins.
1	Cottage Cookery, by Esther Copley.
1	Lord Ashburton on Common Things.
1	Young Emigrants, &c., 18mo.
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1	Children and the Sage, &c., 18mo.
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36	" " single lines.
2	Gross Medium Pens.
4	Dozen Penholders.
25	Lead Pencils.

No. of Copies.	
6	Glass Ink Wells, flat, with filter screw.
1	Bottle of Ink and Basket, and 3 Ink Powders.
2	Treatise on Mensuration, 12mo.
1	Appendix to ditto, for Teachers.
2	Lessons on Housewifery, 18mo.
1	Plain Instructions for Children.
1	Mercator's Map of the World.
1	Groombridge's Atlas, 12mo.
4	Bitell's Spelling, 18mo.
4	Elementary Catechism, "British Empire."
4	" " "Geography"
4	" " "England."
1	Tablet Spelling, 33 Sheets.
30	First Book of Lessons, 18mo.
18	Second Book, 18mo.
3	Sequel to Second Book.
12	Third Book, 12mo.
6	Fourth Book, 12mo.
3	Supplement to Fourth Book.
6	Reading Book for Girls, 12mo.
1	Art of Reading, 12mo.
1	Agricultural Class Book.
4	English Grammar, 18mo.
1	Key to ditto.
2	Engelbach's Epitome of History.
6	Compendium of Geography, 18mo.
1	Epitome of ditto.
12	Sacred Poetry, 18mo.
1	Tablet Arithmetic, 60 Sheets.
24	First Book of Arithmetic, 18mo.
1	Key to ditto.
1	Tegetmier's Diagrams, Thermometers, &c.
24	Arithmetical Table Books.
6	Parts Sunday at Home.
6	Parts Leisure Hour.
	Hymns for Emigrants.
	Prayers for Emigrants at Sea, 12mo.
	Large Bibles.
	Small Bibles.
	New Testaments.

APPENDIX No. 6.

MATERIALS, &c. [March 1866.]

Materials
placed in charge
of the Matron
for the use of
the Emigrants.

BAG A. (*Hospital.*)

Each whole Bag containing the following Articles : half Bag half the Quantity.

2 Cotton Shifts.	3 Infants' Shirts.
2 Short Night Gowns.	2 Do. Bed Gowns.
1 Coloured Wrapping Gown, $1\frac{1}{2}$ yds. long. $3\frac{1}{4}$ wide.	3 Do. Caps.
2 Night Caps.	2 Do. Blankets.
2 White Skirts.	2 Do. Rollers.
1 Dozen Diapers.	1 Square Flannel.

BAG B. (*Work.*)

Each whole Bag containing the following Articles ; half Bag half the Quantity.

65 Yards Calico.	
89 " Cotton Print.	
5 lbs. Patchwork.	
2 Yards Canvas— <i>for Samplers.</i>	
10 lbs. White Knitting Cotton. (Nos. 6 & 12.)	
2 " Assorted Best Sewing Cotton. <i>In $\frac{1}{4}$ Papers.</i>	
$\frac{1}{2}$ " Best Black Sewing Cotton.	
1 " White Darning Cotton. <i>India Middling.</i>	
$\frac{1}{2}$ " White and Black Thread.	
1,000 Assorted Best London Sewing Needles.	
200 Assorted Darning Needles.	
1 Gross Best Knitting Pins. (Nos. 15 & 17.)	
$\frac{1}{2}$ lb. Mixed Pins. <i>Short Whites.</i>	
$\frac{1}{2}$ Gross Assorted Hooks and Eyes.	
12 Pieces White Tape. 9 yards.	
6 " Black Do.	
$\frac{1}{2}$ Gross Oval Boot Laces.	
$\frac{1}{2}$ " Stay Laces.	
$\frac{7}{8}$ Pair Scissors. 1 pair 6 inch. 6 pair smaller.	
$\frac{1}{2}$ Gross Thimbles. <i>Women's.</i>	

APPENDIX No. 7.

MESS UTENSILS TO BE PUT ON BOARD FOR EVERY EIGHT STATUTE ADULTS AND ONE TENTH IN ADDITION.

NOTES.

Mess Utensils,
Cooking Apparatus, and Small Stores.

1. All things and articles herein required to be done or supplied are to be done and supplied to the satisfaction, and if required, according to the directions, of the Commissioners or their Agents.
2. All the Tin Articles mentioned in the following Scales, are to be made of the best Double Block Tin throughout.
3. The Cooperage articles are to be made with stout seasoned Oak Staves, and well and strongly hooped; and the Mess Kits, Water Breakers, Scuttle Butts, Cooks' Tubs, and Harness Casks to be filled with Water at least 48 hours immediately previous to being put on board.
4. Whenever the word "Adult" occurs, it means "Statute Adult" as defined by the Passengers' Act.

SCALE No. 1.

1	Mess Kit, with Iron Handles, to hold 2 gallons	These Articles to be marked with consecutive numbers from 1 upwards, with a line underneath the figures.
1	Tin Oval Dish, and Cover, 14 inches long and 8 inches deep	
1	Quartern Tin Baking Dish for Bread	
1	Bread Tub, with Wooden Hoops and Cover, to hold 10 lbs.	
2	Tin Pots, to hold $3\frac{1}{2}$ pints each, with Covers and Bar Hooks for Boiling Water	
1	Water Bucket, to hold 3 gallons, with nozzle of Galvanized Iron and Plug attached by short Iron Chain	
1	Tin Mustard Pot to hold $\frac{1}{4}$ pint	
1	Tin Pepper and Salt Cellar, divided in the centre	
1	Butter Dish, 7 inches in diameter, and 3 inches deep	
2	Sets of Tin Tallies, hung with Wire Lan- yards	
2	Potato Nets to hold 10 lbs., $\frac{3}{4}$ -inch Mesh	These Articles to be marked with indelible ink with consecutive numbers from 1 upwards, with a line underneath the figures.
1	Pudding Bag, 18 inches long, by 12 inches wide, of No. 8 Canvas	
1	Mess Towel $1\frac{1}{2}$ yard long by $\frac{3}{4}$ yard wide	

SCALE No. 2.—SMALL STORES.

		NUMBER OF PASSENGERS.		
		Under 200.	200 and under 300.	300 and under 400.
Birch Brooms—No. 5.	- - - - -	9	12	15
Coir Brooms, No. 5.	- - - - -	18	24	30
Hair Brushes, with long handles	- - - - -	16	20	24
Hair Brushes, with short handles	- - - - -	16	20	24
Scrubbing Brushes	- - - - -	16	20	24
Swabs	- - - - -	16	20	24
Wash Leathers	- - - - -	6	12	18
Dust Pans	- - - - -	8	10	12
Scrapers (New)	- - - - -	16	20	24
Pails do. to hold 3 gallons each, with perpendicular sides	- - - - -	6	8	10
Combined brushes and squeegees, 10½ inch	- - - - -	4	6	8
Shovels	- - - - -	2	3	4
Mops, No. 5.	- - - - -	16	20	24
Holy Stones, 7 inches by 3½ by 3½	- - - - -	96	120	144
do. mounted	- - - - -	4	6	8
Rubbish Tubs, 6 gallons each, with Rope Buckets	- - - - -	4	4	4
Coals for cooking hearth	- - - - tons	32	32	40
do. (best Steam Coal) for Distilling apparatus	- - - - -	20	25	30
do. for crew	- - - - -	5	5	6
Charcoal	- - - - bushels	10	12	14
Coke	- - - - do.	10	12	14
Firewood (fms. of 630 lbs.)	- - - - -	6	6	9
Sand	- - - - tons	3½	4	5
Whiting	- - - - lbs.	12	12	18
Swing Stoves	- - - - -	4	5	5
Fire Buckets, complete, with Handles and Lanyards of 4 fathoms each	- - - - -	12	12	12
Oven for Bread (as described below) to contain not less cubic feet, internal measurement, than	- - - - -	20	25	30

SCALE No. 3.—COOKING APPARATUS AND MISCELLANEOUS ARTICLES FOR EACH SHIP.

1 Cooking Hearth, complete, with proper rails, bars, and heating surface for Hook Pots, Hot Plates for Boilers, Oven and Damper, Chimney, and 2 sets of Furnace Bars. The Boilers to be of wrought iron, not less than 8 in number, to be fitted with Brass Taps, $2\frac{3}{4}$ -inch and $1\frac{1}{4}$ -inch. The Boilers to hold in all not less than 2 quarts and 10 per cent. over for each adult, to fit securely on the Hot Plate, and 2 of them to be fitted with best double Block Tin Steamers, with racks to hold Saucepans. The oven to be fixed, and to be not less than 16 inches in depth, so as to admit of a shelf, and afford Baking accommodation at the rate of not less than 8 square inches per Adult, for the whole number of passengers. The Cooking Hearth and Oven to be properly covered and protected from the weather as far as practicable. Ships carrying more than 250 Adults to have 2 Hearths, with fittings as above, if the Emigration Officer should deem them to be necessary.

Bakehouse, to be fitted with proper Kneading Troughs and Covers, and Shelves for the use of the Baker; with an Oven to contain not less cubic feet than mentioned in Scale No. 2, and to be made of wrought or cast iron, and the inner casing to be of iron, or to be made throughout of Sheffield fire-bricks or tiles, properly laid and secured with iron framing. If the inner casing be of sheet iron it must be double throughout, with sufficient space between the surfaces to admit of enough sand to prevent the too rapid heating or cooling of the oven. The doors are to be double. The oven is to be fitted with not exceeding 3 Iron Shelves, proper Funnel, Soot Holes, Steam Valves, Blowers, Scrapers, Pokers, Shovels, Peels, and a double set of Furnace Bars. In cases where the Baker's Oven forms part of the Cooking Hearth care must be taken to accommodate the Cook and Baker, so as not to give rise to disputes between them.

3 Scuttle Butts, to contain 100 gallons each.

2 Tubs for Cook, to contain 40 gallons each.

2 Harness Casks, (half hogsheads), fitted with Padlocks.

1 Large water Cask, to be converted into a Bath for men.

Bath room for females to be fitted with a 3 inch combing, well caulked and pitched all round, and with 2 wooden Baths, lined with 6 lb. lead, with proper supply and 2 inch Waste Pipes, Brass Cocks, and Plugs, Seats and Clothes Pegs, to the satisfaction of the Commissioners' Officer. Zinc baths cannot be allowed. The floor of the room to be made watertight, and fitted with a Scupper.

2 Copper Pumps for Water.

1 Copper Hold Pump, with 60 feet of proper Hose to issue allowance of fresh water on upper deck. Hose to be in two lengths, with brass couplings and deck plates.

2 Tarpaulins No. 3 canvas for each Hatchway, large enough to cover the Hatchways Tent fashion.

1 Main Deck and 1 Poop Awning of No. 1 Canvas, with side Screen, complete.

Canvas Screens for each Hatchway, to be made of No. 6 Canvas.

3 Windsails.

4 Life Buoys.

Hexagonal Safety Candle Lanthorns, with Spring Sockets, according to patterns to be seen at the Government Emigration Offices.

1 for every 20 Statute Adults.

2 Spare Plates of Glass for each Lanthorn.

1 Spare Spring for ditto ditto.

Price's Patent Stearine Sperm Candles, in 4 different sizes, prepared expressly for the Commissioners' Ships, packed in proper quantities, in separate parcels, and duly labelled for use by Price's Patent Candle Company. No broken packages will be admitted. Samples may be seen at the Government Emigration Offices.

40 of Size No. 3, to burn 3 hours } for each
40 of do. No. 4, to burn 4 hours } Lanthorn.
40 of do. No. 5, to burn 5 hours }

500 of do. No. 7, to burn 7 hours for each Ship.

Three-fourths of these quantities to be supplied for Vessels to the Cape.

1 Candle Dark Lanthorn—1 Reflector Hand Lanthorn to burn Price's Patent Candles—For each Lanthorn 5 packets of 32 Candles, to burn 4 hours.

2 Safety Candle Lanthorns for Cook and Baker, and 70 Candles, to burn 3 hours for each lanthorn.

4 Knives for Cook—One 10 in., Two 8 in., and One 6 in.

1 Steel, 2 Flesh Forks, and 2 Tormenters.

3 Ladles—1 quart with short handle and lip, 1 pint and a half, and 1 pint.

4 best Block Tin Saucepans to fit Steamers.

2 2 quart Enamel Iron Saucepans.

2 10 quart oval Iron Saucepans.

1 12 do. do.

1 Meat Saw, large size.

1 Cleaver (large size), and 1 Hand Chopper.

2 Hatchets for chopping Wood, fitted.

2 Coal Buckets for $\frac{1}{2}$ cwt. each.

4 Coffee Mills, best quality, with fly wheels, hand-cut steel cylinders, and tins to hold the coffee while grinding.

1 Rice Sieve, tin, with brass wire gauze.

1 Cooper's Adze and Driver, fitted.

1 3-inch Bung Borer.

8 Lever Knives approved.

- 1 Grindstone, fitted in Trough.
- 1 Biscuit Mill, with flywheel.
- 2 Pepper Mills.
- 2 Sieves for Sand, $\frac{1}{8}$ inch mesh.
- 1 Water Filter, Ransome's Patent, 60 gallons, and 2 small Filters of the same kind for Hospital and Dispensary if there is no Water Distilling Apparatus on board.
- 4 Tin Water Funnels—One $\frac{1}{2}$ gallon, Three 1 quart each, to fit Water Breakers.
- 1 Brass Lock Tap for Porter.
- 2 Corkscrews.
- 1 Set of Pewter Measures—1 quart, 1 pint, 1 half pint, 1 gill, one $\frac{1}{2}$ gill, one for Lime juice.
- 1 Set of Tin Measures—Half gallon, quart, and pint.
- 1 Set of Wood Measures—Quart, pint, and half pint.
- 6 Tin Scoops, assorted sizes.
- 1 Pair of Flour Scales, with Stamped Weights, $\frac{1}{4}$ lb. to 14 lbs. inclusive.
- 1 Pair of Counter Balance Scales, with Weights, from $\frac{1}{4}$ oz. to 4 lbs. inclusive.
- 12 Extra panes of plate glass for Skylights.
- 1 Set of Clothes Lines, with Clothes Stops, and blocks to be fitted between main and mizen rigging.
- 1 Accommodation Ladder, fitted with Landings.
- 6 Rope Mats, 6 feet 6 in. long by 2 feet wide.
- 1 Cot, for Hospital, No. 4 Canvas.
- 1 Nursery Lamp.
- 1 Portable Watercloset for each Hospital, with galvanized iron Slop pail.
- 2 Fire Engines complete, one to be fixed, the other to be portable. The working parts to be of Gun Metal, and each engine to be supplied with 80 feet of Delivery Hose, Suction Hose with a Rose at the end, and Delivery Pipe, to discharge in a minute about 35 gallons for Small and 50 gallons for Large Ships. The Engine hose of the fixed Engine to reach over the taffrail.
- 3 Signal Lamps, as per Admiralty Notice, 1st October 1858.
- 1 Gun, 4-pounder, with sponge, rammer, worm, ladle, and priming horn, also with quoins, and stool beds, &c.
- Ammunition, 50 rounds of 8 oz. each, in flannel cartridges, and 6 lbs. of powder in Magazine.
- 2 Dozen Blue Lights.
- 2 Dozen Rockets.
- 1 Lightning Conductor fitted.
- 24 Deal boards, 1-inch.
- 24 Do. $\frac{3}{4}$ -inch.
- 50 Feet 3-inch Quartering.
- 2 Dozen Iron Staples and Hasps, assorted sizes.
- 12 lbs. of Nails, assorted.
- 6 Feet Lead Piping each size, used for Waterclosets, &c., on Board the Ship.

- 4 square feet 6 lbs. Lead.
- 6 Spare Iron Padlocks. } No two Keys to be of the same
- 2 Do. Brass do. 2½-inch. } pattern.
- 1 Soldering Iron, large, with 8 lbs. Solder, and 2 lbs. Rosin.
- 1 Do. small.
- 1 Hammock for each single man, and *one fourth* additional. All
to be fitted with white Clews and Lashings.
- 1 Stern Pump and proper hose, for ditto.
- 2 Spare Levers for Waterclosets.
- 6 Cork Life Belts.
- 1 Fog Horn.
- 3 Thermometers for Surgeon.
Mercantile Code of Signals.
Marine Navy List.
Charts of all the seas the Ship is to traverse, published by the
Admiralty or stamped by the Hydrographer as correct.

APPENDIX No. 8.

DIETARY SCALE. [March 1866.]

Dietary
Scale.

Full rations, according to the following scale, are to be issued during the voyage, and until disembarkation, to each male and female passenger of twelve years of age and upwards, and half rations to children of four years and under twelve years of age. Children between one and four years old will receive half rations, with the substitutions mentioned below. The water and all articles of food are to be of the best quality, and in a sweet and good condition when issued for the use of the passengers.

	ANIMAL FOOD.						BREAD STUFFS.			PRESERVED VEGETABLES.			GROCERIES.			Water. Molasses, Wet Mida.
	Beef.	Pork.	Preserved Meat.	Suet.	Butter.	Biscuit.	Flour.	Oatmeal.	Peas.	Potatoes.	Carrots.	Onions.	Raisins.	Tea.	Coffee Weight roasted.	
SUNDAY	oz. 8	oz. 8	oz. 2	oz. 2	oz. 6	oz. 8	oz. 8	oz. 8	oz. 8	oz. 8	oz. 8	oz. 8	oz. 8	oz. 8	oz. 8	qts.* 3
MONDAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
TUESDAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
WEDNESDAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
THURSDAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
FRIDAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
SATURDAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
WEEKLY TOTALS }	16	24	16	6	6	42	56	16	8	8	8	8	8	1	2	21

* The water is, as far as possible, to be distilled water. In the tropics the Surgeon may issue a larger allowance, provided the supply will admit of it.

Mixed pickles -	-	-	Half gill	Twice
Lime juice, while within the tropics -	-	-	Three ounces } weekly	Half an ounce } Weekly
				Two ounces } -
				Half an ounce } -

Children between one and four years of age are to receive alternately preserved beef and mutton instead of salt meat every day, also half a pint of preserved milk, and every alternate day, one egg or two teaspoonfulls of condensed egg. Children under one year old are to be allowed 3 pints

of water daily; and if above four months old, half a pint of milk daily; also 3 oz. of preserved soup, and one egg, or two teaspoonsfulls of condensed egg, every alternate day, and 12 oz. of biscuit, 4 oz. of oatmeal, 8 oz. of flour, 4 oz. of rice, and 10 oz. of sugar weekly. To infants under four months old, the Surgeon may issue such nutriment as he may in any case think necessary. The Surgeon may draw an additional quart of water daily for the use of each person sick in the hospital.

While in any port in the United Kingdom, or in any port to which the vessel may put before completing the voyage, and for two days after sailing, and while the Emigrants remain on board in the port of disembarkation, three quarters of a pound of fresh meat, one pound and a half of soft bread, and one pound of potatoes, per statute adult, are to be issued daily (if obtainable), with a suitable supply of vegetables, in lieu of all the other rations, except tea, coffee, sugar, and butter.

To provide for the above rations at sea, the following net quantities, at least, of provisions and water are to be shipped for every 100 statute adults which the ship can legally carry, and in the same proportion for any number less than 100 statute adults, viz.:—

	Ibs.	Ibs.	Ibs.	Ibs.
Beef (b)	-	-	Oatmeal	-
Pork (b)	-	-	Rice (one half Carolina)	-
Preserved meat, half-mutton and half beef (c) -	2,300	2,200	Sugar	-
		1,100	West India molasses	-
		1,000	Peas (d)	-
			Preserved gravy soup in 1 lb. tins	-
			Grinwade's Desiccated milk in 10 oz. bottles	170 lbs.
				Condensed egg in $\frac{1}{4}$ lb. tins
Suet	-	750	Carrots (f)	1,000
Butter	-	750	Onions (f)	1,000
Biscuit (a)	-	5,500		1,000
Flour	-	7,250	Mixed pickles	-
			Lime juice (g)	500 pints
			Mustard	125 lbs.
				300 lbs.
				65 "
				Mustard

One seventh of the above quantities is to be deducted for vessels to Western Australia, and one fourth for vessels to the Cape. One fourteenth is to be added for vessels to New Zealand.

- (a) The biscuit must not be below the second quality of that article, and at least two thirds of the whole supply must be packed in casks or sound barrels.
- (b) These articles are to be prime new Irish or American, East India beef, and picked pieces of prime mess pork, Irish, Dantzie, or Hambo'. No part of the supply to consist of soup and bouilli. The tins of preserved meats to contain not more than 4 lbs. each, and to be marked with raised figures from the inside of the tins with the date of preparation, and to be packed in moderate sized casks.
- (c) The peas must be issued in a cooked state, as the Surgeon may direct.
- (d) From September to March inclusive, parties will have the option of taking a supply of fresh potatoes for the first month or six weeks, substituting one pound for the quarter of a pound of preserved potatoes. Fresh potatoes must be packed, one hafin in casks, the heads of which have been perforated, and the other half in bags.
- (f) These preserved vegetables must be the preparations of some person or firm approved by the Commissioners. The tins are to be marked with raised figures from the inside with the date of their preparation, are to contain not more than 4 lbs. each, and are to be packed in moderate sized casks.
- (g) The lime juice to be packed in wickered stone bottles of 3 gallons each. Out of the tropics, lime juice may be issued or not, at the discretion of the Surgeon.
- (h) Only half this quantity of water need be shipped in vessels which carry an apparatus duly approved by the said Commissioners for distilling fresh from salt water.

APPENDIX No. 9.

HINTS ON THE DIETARY.

Hints on the
Dietary.

No subject has been found more liable to excite distrust in the Emigrants than their Allowances under the scale of victualling. The scale now drawn up and required to be exhibited for their information has, therefore, been rendered very plain and explicit, in the hope that it may be of use in repressing this evil. And as the Medical Comforts more especially were found to call forth the suspicions of the people, under the mistaken idea that they were to be entitled to those articles as a matter of regular issue like the ordinary dietary, no list at all of the comforts has been printed in the scale for the Passengers' information, but they are merely apprised that there is a sufficient supply of such articles, which the Surgeon alone is to control while on board.

It will be observed that the present Dietary Scale contains a larger variety of articles of food than that formerly in use in the Commissioners' Emigrant Ships, and that with the view of rendering this food capable of being properly cooked in different forms, an oven is put on board for the exclusive use of the Commissioners' Emigrants. By these means the health of the passengers, especially of the young and of women who are nursing, will, it is hoped, be promoted during the voyage.

Surgeons will doubtless bear in mind the probable effect on the health and spirits of the Emigrants which a sudden change of living may produce on their first joining the vessel, and the care that is necessary to accustom them to this change. It is very likely that some of the Emigrants who have been in the receipt of comparatively high wages may miss the stimulating food and drinks which they have been used to, whilst Agricultural Labourers and others who may have been recently out of employment, would be liable to suffer from the too free use of a more concentrated diet than they have been accustomed to. This is especially likely to be the case with Highlanders and the Irish.

The Surgeon should, therefore, give his best attention to these points, particularly at the beginning of the voyage.

Before the ship sails, a two days' supply of Fresh Beef is put on board for the Emigrants, after which the Charter Party Scale of Diet will be issued daily. But whenever Diarrhoea prevails the Surgeon should stop the issue of such of the articles as are considered to be the most indigestible, and issue others more frequently in their stead. For instance, instead of Salt Pork and Peas, an issue of Preserved Meat (not bouilli) and Rice may probably be substituted with advantage. A careful note should be made of the days on which such substitution takes place, in order that at a proper time these irregular issues may be duly allowed for, so as to prevent any of the articles from running short during the voyage.

It is obvious that the Emigrants will be at first quite unacquainted with the best uses of many of the articles of diet put on board for their consumption. The Surgeon should therefore instruct them as far as he can in the preparation of various dishes from the several

articles of food. The general custom has hitherto been to dress nearly all the food in the coppers, but as an oven is now supplied and a properly qualified Baker appointed the Emigrants should be recommended to use it freely for cooking such food as can be baked, especially that intended for their children.

The porter is principally intended for nursing mothers and persons Porter. in feeble health. The Surgeon may allow, if thought proper, a pint of stout daily to women who are nursing.

In regard to the management of water, both the Surgeon and the Water Master should carefully bear in mind that the butts in which the water is laid in are old measure, while the daily allowance is served at the new imperial measure, which is larger by one fifth than the former. The water issued for cooking and drinking purposes is, as far as possible, to be the distilled water. Its freedom from sea water Test for may be tested by dissolving in it a small quantity of nitrate of silver, presence of salt which will not discolour pure distilled water. For the test of water ordinary fresh water see page 78.

The lime juicee should be of a pale lemon colour, slightly turbid. It should be well strained and as free as possible from matter in suspension. Flocculent or mucilaginous looking lime juice will not keep, although it may be pure juice.

The issue of lemon juice to each person is to be 1 oz. with $\frac{3}{4}$ oz. of sugar. An equal quantity of sugar used to be allowed, but it is found that three fourths make a better proportion. The quantity to be placed on board is 300 lbs. of lemon juice to every 100 adults. It is, generally speaking, not considered necessary to commence the use of the lime juice until after the first three or four weeks at sea. More frequent issues will probably be advisable in the hot latitudes than in the cold.

The allowance of preserved milk to be issued for the day should be delivered to the hospital assistant, who will prepare it for use, and then issue it according to the instructions of the Surgeon Superintendent.

For dissolving the desiccated milk, plain directions, which should be very carefully followed, are given on the bottles containing it.

To prepare for are recommended :—Empty all the tins required for the day's use into a clean wooden bucket. To two parts of milk add one of boiling filtered water. This will dissolve the casein and oily particles to a great extent, and render the milk more wholesome, as well as more palatable, to the emigrants. The milk should then be served out from the bucket in such quantities as the surgeon may direct.

The bucket in which the milk is prepared should not be used for any other purpose, and should be well sealed and scrubbed out, and put to dry as soon as it is done with.

Contrivances for making every detail as methodical and as rapidly recollected as possible are of great importance to the contentment and confidence of the people, and to the easy working of the whole scheme.

There is no objection at all to the Surgeon's varying the use of different medical comforts according to circumstances and expediency, but each variation should, to the utmost extent which is practicable, assume the shape of system instead of having no apparent regularity.

APPENDIX

SCALE OF RATIONS FOR MESSES VARYING FROM 5 TO 10 ADULTS,
AND PERSONS OF 12 YEARS ANDScale of
Rations.

DAYS OF ISSUE.	No. of Adults in a Mess.	Beef.		Pork.		Preserved Meat.		Suet.		Butter.		Biscuit.		Flour.	
		lbs.	ozs.	lbs.	ozs.	lbs.	ozs.	lbs.	ozs.	lbs.	ozs.	lbs.	ozs.	lbs.	ozs.
SUNDAY .	5	.	.	2	8	.	.	10	.	.	.	1	14	2	8
	5½	.	.	2	12	.	.	0	11	.	.	2	1	2	12
	6	.	.	3	0	.	.	0	12	.	.	2	4	3	0
	6½	.	.	3	4	.	.	0	13	.	.	2	7	3	4
	7	.	.	3	8	.	.	0	14	.	.	2	10	3	8
	7½	.	.	3	12	.	.	0	15	.	.	2	13	3	12
	8	.	.	4	0	.	.	1	0	.	.	3	0	4	0
	8½	.	.	4	4	.	.	1	1	.	.	3	3	4	4
	9	.	.	4	8	.	.	1	2	.	.	3	6	4	8
	9½	.	.	4	12	.	.	1	3	.	.	3	9	4	12
MONDAY .	10	.	.	5	0	.	.	1	4	.	.	3	12	5	0
	5	.	.	.	.	2	8	.	.	0	15	1	14	2	8
	5½	.	.	.	.	2	12	.	.	1	0½	2	1	2	12
	6	.	.	.	.	3	0	.	.	1	2	2	4	3	0
	6½	.	.	.	.	3	4	.	.	1	3½	2	7	3	4
	7	.	.	.	.	3	8	.	.	1	5	2	10	3	8
	7½	.	.	.	.	3	12	.	.	1	6½	2	13	3	12
	8	.	.	.	.	4	0	.	.	1	8	3	0	4	0
	8½	.	.	.	.	4	4	.	.	1	9½	3	3	4	4
	9	.	.	.	.	4	8	.	.	1	11	3	6	4	8
TUESDAY .	9½	.	.	.	.	4	12	.	.	1	12½	3	9	4	12
	10	.	.	.	.	5	0	.	.	1	14	3	12	5	0
WEDNESDAY .	5	2	8	.	.	.	.	.	.	.	.	1	14	2	8
	5½	2	12	.	.	.	.	.	.	.	.	2	1	2	12
	6	3	0	.	.	.	.	.	.	.	.	2	4	3	0
	6½	3	4	.	.	.	.	.	.	.	.	2	7	3	4
	7	3	8	.	.	.	.	.	.	.	.	2	10	3	8
	7½	3	12	.	.	.	.	.	.	.	.	2	13	3	12
	8	4	0	.	.	.	.	.	.	.	.	3	0	4	0
	8½	4	4	.	.	.	.	.	.	.	.	3	3	4	4
	9	4	8	.	.	.	.	.	.	.	.	3	6	4	8
	9½	4	12	.	.	.	.	.	.	.	.	3	9	4	12
	10	5	0	.	.	.	.	.	.	.	.	3	12	5	0

No. 10.

COMPUTING CHILDREN BETWEEN 1 AND 12 YEARS AS $\frac{1}{2}$ ADULTS,
UPWARDS AS ADULTS. [March 1866.]

Oatmeal.	Peas.	Rice.	Preserved Potatoes.	Preserved Carrots.	Preserved Onions.	Raisins.	Water.	No. of Adults in a Mess.
lbs. ozs.	pts. gills	lbs. ozs.	lbs. ozs.	lbs. ozs.	lbs. ozs.	lbs. ozs.	Pints.	
.	1 1	.	.	.	1 4	0 15	30	5
.	1 1½	.	.	.	1 6	0 1½	33	5½
.	1 2	.	.	.	1 8	1 2	36	6
.	1 2½	.	.	.	1 10	1 3½	39	6½
.	1 3	.	.	.	1 12	1 5	42	7
.	1 3½	.	.	.	1 14	1 6½	45	7½
.	2 0	.	.	.	2 0	1 8	48	8
.	2 0½	.	.	.	2 2	1 9½	51	8½
.	2 1	.	.	.	2 4	1 11	54	9
.	2 1½	.	.	.	2 6	1 12½	57	9½
.	2 2	.	.	.	2 8	1 14	60	10
.	.	1 4	1 4	.	.	.	30	5
.	.	1 6	1 6	.	.	.	33	5½
.	.	1 8	1 8	.	.	.	36	6
.	.	1 10	1 10	.	.	.	39	6½
.	.	1 12	1 12	.	.	.	42	7
.	.	1 14	1 14	.	.	.	45	7½
.	.	2 0	2 0	.	.	.	48	8
.	.	2 2	2 2	.	.	.	51	8½
.	.	2 4	2 4	.	.	.	54	9
.	.	2 6	2 6	.	.	.	57	9½
.	.	2 8	2 8	.	.	.	60	10
2 8	.	.	.	1 4	.	.	30	5
2 12	.	.	.	1 6	.	.	33	5½
3 0	.	.	.	1 8	.	.	36	6
3 4	.	.	.	1 10	.	.	39	6½
3 8	.	.	.	1 12	.	.	42	7
3 12	.	.	.	1 14	.	.	45	7½
4 0	.	.	.	2 0	.	.	48	8
4 4	.	.	.	2 2	.	.	51	8½
4 8	.	.	.	2 4	.	.	54	9
4 12	.	.	.	2 6	.	.	57	9½
5 0	.	.	.	2 8	.	.	60	10
.	1 1	.	.	.	1 4	0 10	30	5
.	1 1½	.	.	.	1 6	0 11	33	5½
.	1 2	.	.	.	1 8	0 12	36	6
.	1 2½	.	.	.	1 10	0 13	39	6½
.	1 3	.	.	.	1 12	0 14	42	7
.	1 3½	.	.	.	1 14	0 15	45	7½
.	2 0	.	.	.	2 0	1 0	48	8
.	2 0½	.	.	.	2 2	1 1	51	8½
.	2 1	.	.	.	2 4	1 2	54	9
.	2 1½	.	.	.	2 6	1 3	57	9½
.	2 2	5	.	.	2 8	1 4	60	10

SCALE OF

Days of Issue.	No. of Adults in a Mess.	Beef.	Pork.	Preserved Meat.	Suet.	Butter.	Biscuit.	Flour.
THURSDAY	5	2 8	.	.	.	0 15	1 14	2 8
	5½	2 12	.	.	.	1 0½	2 1	2 12
	6	3 0	.	.	.	1 2	2 4	3 0
	6½	3 4	.	.	.	1 3½	2 7	3 4
	7	3 8	.	.	.	1 5	2 10	3 8
	7½	3 12	.	.	.	1 6½	2 13	3 12
	8	4 0	.	.	.	1 8	3 0	4 0
	8½	4 4	.	.	.	1 9½	3 3	4 4
	9	4 8	.	.	.	1 11	3 6	4 8
	9½	4 12	.	.	.	1 12½	3 9	4 12
	10	5 0	.	.	.	1 14	3 12	5 0
FRIDAY	5	.	.	2 8	0 10	.	1 14	2 8
	5½	.	.	2 12	0 11	.	2 1	2 12
	6	.	.	3 0	0 12	.	2 4	3 0
	6½	.	.	3 4	0 13	.	2 7	3 4
	7	.	.	3 8	0 14	.	2 10	3 8
	7½	.	.	3 12	0 15	.	2 13	3 12
	8	.	.	4 0	1 0	.	3 0	4 0
	8½	.	.	4 4	1 1	.	3 3	4 4
	9	.	.	4 8	1 2	.	3 6	4 8
	9½	.	.	4 12	1 3	.	3 9	4 12
	10	.	.	5 0	1 4	.	3 12	5 0
SATURDAY	5	.	.	2 8	.	.	1 14	2 8
	5½	.	.	2 12	.	.	2 1	2 12
	6	.	.	3 0	.	.	2 4	3 0
	6½	.	.	3 4	.	.	2 7	3 4
	7	.	.	3 8	.	.	2 10	3 8
	7½	.	.	3 12	.	.	2 13	3 12
	8	.	.	4 0	.	.	3 0	4 0
	8½	.	.	4 4	.	.	3 3	4 4
	9	.	.	4 8	.	.	3 6	4 8
	9½	.	.	4 12	.	.	3 9	4 12
	10	.	.	5 0	.	.	3 12	5 0

WEEKLY SCALE

No. of Adults in a Mess.	Tea.	Coffee when roasted.	Sugar.	West India Molasses.	*Lime Juice.	Mustard.	Pepper, ground.	Salt.	*Mixed Pickles.	Soap.
	ozs.	lbs. ozs.	lbs. ozs.	lbs. ozs.	lbs. ozs.	ozs.	ozs.	lbs. ozs.	pts. gls.	lbs. ozs.
5	5	0 10	3 12	2 8	1 14	2½	2½	0 10	1 1	1 4
5½	5½	0 11	4 2	2 12	2 1	2½	2½	0 11	1 1½	1 6
6	6	0 12	4 8	3 0	2 4	3	3	0 12	1 2	1 8
6½	6½	0 13	4 14	3 4	2 7	3½	3½	0 13	1 3	1 10
7	7	0 14	5 4	3 8	2 10	3½	3½	0 14	1 3	1 12
7½	7½	0 15	5 10	3 12	2 13	3½	3½	0 15	1 3½	1 14

* Half of these quantities of Lime Juice and Mixed Pickles

RATIONS—*continued.*

Oatmeal.	Peas.	Rice.	Preserved Potatoes.	Preserved Carrots.	Preserved Onions.	Raisins.	Water.	No. of Adults in a Mess.
lbs. ozs.	pts. gills	lbs. ozs.	lbs. ozs.	lbs. ozs.	lbs. ozs.	lbs. ozs.	Pints.	
.	.	.	.	1 4	.	.	30	5
.	.	.	.	1 6	.	.	33	5½
.	.	.	.	1 8	.	.	36	6
.	.	.	.	1 10	.	.	39	6½
.	.	.	.	1 12	.	.	42	7
.	.	.	.	1 14	.	.	45	7½
.	.	.	.	2 0	.	.	48	8
.	.	.	.	2 2	.	.	51	8½
.	.	.	.	2 4	.	.	54	9
.	.	.	.	2 6	.	.	57	9½
.	.	.	.	2 8	.	.	60	10
2 8	.	1 4	1 4	.	.	0 15	30	5
2 12	.	1 6	1 6	.	.	1 0½	33	5½
3 0	.	1 8	1 8	.	.	1 2	36	6
3 4	.	1 10	1 10	.	.	1 3½	39	6½
3 8	.	1 12	1 12	.	.	1 5	42	7
3 12	.	1 14	1 14	.	.	1 6½	45	7½
4 0	.	2 0	2 0	.	.	1 8	48	8
4 4	.	2 2	2 2	.	.	1 9½	51	8½
4 8	.	2 4	2 4	.	.	1 11	54	9
4 12	.	2 6	2 6	.	.	1 12½	57	9½
5 0	.	2 8	2 8	.	.	1 14	60	10
.	1 1	.	.	.	.	.	30	5
.	1 1½	.	.	.	.	.	33	5½
.	1 2	.	.	.	.	.	36	6
.	1 2½	.	.	.	.	.	39	6½
.	1 3	.	.	.	.	.	42	7
.	1 3½	.	.	.	.	.	45	7½
.	2 0	.	.	.	.	.	48	8
.	2 0½	.	.	.	.	.	51	8½
.	2 1	.	.	.	.	.	54	9
.	2 1½	.	.	.	.	.	57	9½
.	2 2	.	.	.	.	.	60	10

OF RATIONS, &c.

No. of Adults in a Mess.	Tea.	Coffee when roasted.	Sugar.	West India Molasses.	*Lime Juice.	Mustard.	Pepper, ground.	Salt.	*Mixed Pickles.	Soap.
	ozs.	lbs. ozs.	lbs. ozs.	lbs. ozs.	lbs. ozs.	ozs.	ozs.	lbs. ozs.	pts. gills	lbs. ozs.
8	8	1 0	6 0	4 0	3 0	4	4	1 0	2 0	2 0
8½	8½	1 1	6 6	4 4	3 3	4½	4½	1 1	2 0½	2 2
9	9	1 2	6 12	4 8	3 6	4½	4½	1 2	2 1	2 4
9½	9½	1 3	7 2	4 12	3 9	4¾	4¾	1 3	2 1½	2 6
10	10	1 4	7 8	5 0	3 12	5	5	1 4	2 2	2 8

are to be issued twice a-week instead of the whole weekly.

Form of Mess
Card.

FORM OF MESS CARD.

[March 1866.]

Mess No. _____.

Rations for 6 Adults.

		Sun ^y	Mon ^y	Tues ^y	Wed ^y	Thurs ^y	Friday	Satur ^y
		lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.
Beef	-	-	-	3 0	---	3 0	—	—
Pork	-	-	3 0	—	3 0	—	—	3 0
Preserved Meat	-	-	3 0	—	—	—	3 0	—
Suet	-	-	0 12	—	0 12	—	0 12	—
Butter	-	-	1 2	—	—	1 2	—	—
Biscuit	-	-	2 4	2 4	2 4	2 4	2 4	2 4
Flour	-	-	3 0	3 0	3 0	3 0	3 0	3 0
Oatmeal	-	-	—	3 0	—	—	3 0	—
Peas (gills)	-	-	6	—	6	—	—	6
Rice	-	-	—	1 8	—	—	1 8	—
Preserved Potatoes	-	-	—	1 8	—	—	1 8	—
Preserved Carrots	-	-	—	—	1 8	—	1 8	—
Preserved Onions	-	1 8	—	—	1 8	—	—	—
Raisins	-	1 2	—	—	0 12	—	1 2	—
Water (pints)	-	36	36	36	36	36	36	36

Additional Weekly Issue.

Tea.	Coffee.	Sugar.	West India Molasses.	Lime Juice.	Mustard.	Pep- per.	Salt.	Mixed Pickles.	Soap.
oz.	oz.	lbs. oz.	lbs. oz.	lbs. oz.	oz.	oz.	oz.	pt. gills	lbs. oz.
6	12	4 8	3 0	2 4	3	3	12	1 2	1 8

Children's Allowance.

To be issued in the discretion of the Surgeon Superintendent.

Between one and four years of age, preserved beef and mutton alternately instead of salt meat every day, also $\frac{1}{2}$ pint of preserved milk, and every alternate day one egg or 2 teaspoonsful of condensed egg. Children under one year old, 3 pints of water daily, and if above four months old, $\frac{1}{2}$ pint of milk daily; also every alternate day, 3 oz. of preserved soup, and one egg, or 2 teaspoonsful of condensed egg; and weekly, 12 oz. of biscuit, 4 oz. of oatmeal, 8 oz. of flour, 4 oz. of rice, and 10 oz. of sugar.

(Indorsed.)

Mess No. _____.

Captain _____.

APPENDIX No. 11.

PRESERVATION of ORDER and CLEANLINESS.

The 59th and 60th Sections of the Passengers' Act of 1855 Sections 59 and (18 & 19 Vict. cap. 119), empowering the Queen, by Order in Council, to prescribe Rules for preserving order and securing cleanliness and ventilation on board "Passenger Ships."

Section 59.—It shall be lawful for Her Majesty, by any Order in Council, to prescribe such Rules and Regulations as to Her Majesty may seem fit for the following purposes ; (that is to say,)

1. For preserving order, promoting health, and securing cleanliness and ventilation on board of "Passenger Ships" proceeding from the United Kingdom to any port or place in Her Majesty's possessions abroad.

2. For permitting the use on board of "Passenger Ships" of an apparatus for distilling Water, and for defining in such case the quantity of fresh water to be carried in tanks or casks for the passengers.

3. For prohibiting Emigration from any port or ports at any time when Choleraic or any Epidemic Disease may be generally prevalent in the United Kingdom or any part thereof, or for reducing the number of passengers allowed to be carried in "Passenger Ships" generally, or from any particular ports under the provisions of this Act.

4. For requiring duly qualified Medical Practitioners to be carried in "Passenger Ships," in cases where they would not be required to be carried under the provisions of this Act.

Any such Order in Council may from time to time in like manner be altered, amended, and revoked, as occasion may require. Any copy of such Order in Council contained in the *London Gazette*, or purporting to be printed by the Queen's Printer, shall throughout Her Majesty's Dominions be received in all legal proceedings as good and sufficient evidence of the making and contents of any such Order in Council.

Section 60. In every such "Passenger Ship"** the Medical Practitioner on board, aided by the Master thereof, or, in the absence of such Medical Practitioner, the Master of such ship, is hereby empowered to exact obedience to all Rules and Regulations which may be prescribed by any such Order in Council to be observed on board Passenger Ships as aforesaid ; and any person on board who shall neglect or refuse to obey any such Rule or Regulation, or who shall obstruct the Medical Practitioner or Master of such ship in the execution of any duty imposed upon him by any such Rule or Regulation, or who shall offend against any of the provisions of this Act, or who shall be guilty of riotous or insubordinate conduct, shall

* N.B.—A "Passenger Ship" is defined by the 3rd Section of the Passengers Act Amendment Act, 1863, to be any ship "carrying more than 50 passengers, or a greater number of passengers than in the proportion of one statute adult to every 33 tons of the registered tonnage of such ship, if propelled by sails, or of one statute adult to every 20 tons, if propelled by steam."

be liable for each offence to a penalty not exceeding Two Pounds Sterling, and in addition thereto, to be confined in the common gaol for any period not exceeding One Month, at the discretion of the justices who shall adjudicate on the complaint.

Order in
Council,
7 Jan. 1864.

ORDER IN COUNCIL FOR PRESCRIBING RULES FOR GOOD ORDER, &c.

At the Court at Osborne House, Isle of Wight, the 7th day of January 1864.

PRESENT :

The Queen's most Excellent Majesty in Council.

Whereas by the "Passengers Act, 1855," it is amongst other things enacted, that it shall be lawful for Her Majesty, by an Order in Council, to prescribe such rules and regulations as to Her Majesty may seem fit for preserving order, promoting health, and securing cleanliness and ventilation on board of passenger ships proceeding from the United Kingdom to any port or place in Her Majesty's possessions abroad, and the said rules and regulations from time to time in like manner to alter, amend, and revoke, as occasion may require :

And whereas it is expedient to revoke an Order in Council made at a Court held at Buckingham Palace on the twenty-fifth day of February one thousand eight hundred and fifty-six, in virtue of the provisions of the said Act, and to make a new Order in Council :

Now, therefore, Her Majesty doth, by and with the advice of Her Privy Council, and in pursuance and exercise of the authority vested in Her by the said "Passengers Act, 1855," order, and it is hereby ordered, that the said Order in Council of the twenty-fifth day of February one thousand eight hundred and fifty-six be and the same is hereby revoked ; and that the following shall henceforth be the rules for preserving order, for promoting health, and for securing cleanliness and ventilation, to be observed on board of every passenger ship proceeding from the United Kingdom to any port or place in Her Majesty's possessions abroad out of Europe, and not being within the Mediterranean Sea.

1. All passengers who shall not be prevented by sickness or other sufficient cause, to be determined by the surgeon, or in ships carrying no surgeon, by the master, shall rise not later than seven o'clock a.m., at which hour the fires shall be lighted.
2. It shall be the duty of the cook or cooks, appointed under the thirty-ninth section of the said "Passengers Act, 1855," to light the fires, and to take care that they be kept alight during the day ; and also to take care that each passenger or family of passengers shall have the use of the fireplace at proper hours, in an order to be fixed by the master.

3. When the passengers are dressed, their beds shall be rolled up. Order in
4. The decks, including the space under the bottom of the berths, Council,
shall be swept before breakfast, and all dirt thrown over- 7 Jan. 1864.
5. The breakfast hour shall be from eight to nine o'clock a.m.
Before the commencement of breakfast, all the emigrants,
except as herein-before excepted, are to be out of bed and
dressed, and the beds rolled up, and the deck on which the
emigrants live properly swept.
6. The deck shall further be swept after every meal, and after
breakfast is concluded shall be also dry holystoned or scraped.
This duty, as well as that of cleaning the ladders, hospitals,
round houses, and water closets, and of pumping water into
the cisterns or tanks for the supply of the water closets, shall
be performed by a party who shall be taken in rotation from
the adult males above fourteen, in the proportion of five to
every one hundred emigrants, and shall be considered as
sweepers for the day. But the single women shall do all
necessary acts for keeping clean and in a proper state their
own compartment, where a separate compartment is allotted
to them, and the occupant of each berth shall see that his or
her own berth is well brushed out.
7. Dinner shall commence at one o'clock p.m. and supper at six
p.m.
8. The fires shall be extinguished at 7 p.m. unless otherwise
directed by the master or required for the use of the sick ;
and the emigrants shall be in their berths at ten o'clock p.m.,
except under the permission or authority of the surgeon, or,
if there be no surgeon, of the master.
9. On each passenger deck there shall be lit at dusk, and kept
burning till daylight, three safety lamps, and such further
number as shall allow one to be placed at each of the hatch-
ways used by passengers.
10. No naked light shall be allowed between decks or in the hold,
at any time or on any account.
11. The scuttles and stern ports, if any, shall, weather permitting,
be opened at seven o'clock a.m. and kept open till ten o'clock
p.m. ; and the hatches shall be kept open whenever the
weather permits.
12. The coppers and cooking utensils shall be cleaned every day,
and the cisterns kept filled with water.
13. The beds shall be well shaken and aired on deck, weather
permitting, at least twice a week.
14. The bottom boards of the berths, if not fixtures, shall be
removed and dry-scrubbed, and, weather permitting, taken
on deck, at least twice a week.
15. Two days in the week shall be appointed by the master as
washing days ; but no washing or drying of clothes shall on
any account be permitted between decks.
16. On Sunday mornings the passengers shall be mustered at ten
o'clock a.m., and will be expected to appear in clean and

Order in
Council,
7 Jan. 1864.

decent apparel. The Lord's Day shall be observed as religiously as circumstances will admit.

17. No spirits or gunpowder shall be taken on board by any passenger; and if either of those articles be discovered in the possession of a passenger, it shall be taken into the custody of the master during the voyage, and not returned to the passenger until he has landed or is on the point of landing.
18. No loose hay or straw shall be allowed below for any purpose.
19. No smoking shall be allowed between decks.
20. The following kinds of misconduct are hereby strictly prohibited; that is to say, all immoral or indecent acts or conduct, taking improper liberties or using improper familiarity with the female passengers, using blasphemous, obscene, or indecent language, or language tending to a breach of the peace, swearing, gambling, drunkenness, fighting, disorderly, riotous, quarrelsome, or insubordinate conduct, also all deposits of filth or offensive acts of uncleanliness in the between decks: Provided that no conviction under the said Passengers Act for any of the offences herein specified shall operate as a bar to any civil or criminal proceedings which may in the ordinary course of law be instituted for the same offence by any party aggrieved.
21. Fire-arms, swords, and other offensive weapons shall, as soon as the passengers embark, be placed in the custody of the master.
22. No sailors shall be allowed to remain on the passenger deck among the passengers, except on duty.
23. No passenger shall go to the ship's cookhouse without special permission from the master, nor remain in the forecastle among the sailors on any account.
24. In vessels not expressly required by the said "Passengers Act, 1855," to have on board such ventilating apparatus as therein mentioned, such other provision shall be made for ventilation as shall be required by the Emigration Officer at the port of embarkation, or, in his absence, by the officers of Customs.
25. And, to prevent all doubts in the construction of this Order in Council, it is hereby further ordered, that the terms "United Kingdom," "Passenger," "Passenger Ship," "Passenger Deck," and "Master," shall herein have the same significations as are assigned to them respectively in the said Passengers Act, 1855; and, unless inconsistent with the context, words of one number shall import both numbers.

And the Most Noble the Duke of Newcastle, one of Her Majesty's Principal Secretaries of State, is to give the necessary directions herein accordingly.

EDMUND HARRISON.

ADDITIONAL REGULATIONS TO BE OBSERVED ON BOARD GOVERNMENT EMIGRANT SHIPS.

1. The emigrants are to be divided into Messes.
2. Every Mess is to have a head man, to be responsible for the order and regularity of it, and whose duty it will be to report to the Surgeon any misconduct or neglect requiring correction. Regulations in Government Emigrant Ships.
3. The Surgeon Superintendent will appoint from amongst the emigrants a sufficient number of constables for the enforcement of the regulations, and of cleanliness and good order; and one constable for the special purpose of looking after and keeping in order the waterclosets and privies, who will, if his duties be satisfactorily performed, receive at the end of the voyage a larger gratuity than the ordinary constables.
4. The constables will attend daily at the serving out of the provisions, to see that each Mess receives its proper Allowance, and that justice is done, and a scale of the victualling will be affixed in some conspicuous part of the ship, for the information of all concerned.
5. The Surgeon Superintendent is to appoint one man, if he think proper, to be his Assistant in the Hospital, or generally in attendance on the sick.
6. One or more women, as may be necessary, will be taken in rotation to attend any sick in the Female Hospital.
7. If there be no religious instructor on board, or schoolmaster appointed by the Commissioners, the Surgeon Superintendent will select a person to act as teacher to the emigrants.
8. One man may be taken in rotation, if necessary, to act as the Cook's Assistant.
9. The teacher and the constables are to be exempt from the duty of cleaning decks amongst the Messes, or from taking their turn in the party of general cleaners and sweepers. The man acting as Cook's Assistant for the day, if there be one, and the Hospital Man, will also be exempt from those duties.
10. On every Thursday there shall be a muster of the emigrants in clean linen and apparel.
11. Weather permitting, all the children are to be sent on deck immediately after breakfast, to be inspected as to their cleanliness by the Surgeon, Religious Instructor, or the Teacher.
12. School hours are to be fixed by the Religious Instructor or Schoolmaster, subject to the approval of the Surgeon Superintendent, or, if there be no Religious Instructor, by the Surgeon himself.
13. Divine Service is to be performed at least once on every Sunday.
14. The married men in rotation will keep a watch in their part of the 'tween decks during the night. There should be two or three in each watch, and the night should be divided into three watches; the first from eight P.M. to midnight, the second from midnight till four o'clock, and the morning watch from four to seven A.M. The business of the watch will be to prevent irregularities—to assist any persons taken ill—to attend to the hatchways, deck-ventilators, and

scuttles, seeing that they are open or shut, according to the weather and the Surgeon's directions—and to make any representation that may be necessary to the Surgeon Superintendent.

15. The heavy luggage is to be put in the hold. The emigrants will have access to their boxes at intervals of three or four weeks, as the Surgeon Superintendent may direct.

16. All questions that may arise on the preceding regulations are to be decided conclusively by the authority of the Surgeon Superintendent, who is entirely responsible for the care and good management of the emigrants, and whose authority is to be respected in all cases accordingly.

17. The Surgeon Superintendent is enjoined to refuse the extra comforts when in course of issue, and to deny any other indulgence he may think proper, to any persons who wilfully neglect or obstruct the established Rules; and in case of gross misconduct or insubordination, he will report it to the Governor on arrival, with the name of the offender, in order that any penalties which may have been incurred under the Passengers' Act may be duly enforced.

The preceding Regulations, in connexion with those prescribed by the Order in Council, will, the Commissioners believe, if properly attended to, be found sufficient to ensure good order, cleanliness, and comfort during the voyage. But if they be neglected, the health, comfort, and future prospects of the emigrants must be injured. Unless cleanliness and ventilation be attended to, the emigrants cannot be preserved in health—unless regularity and harmony be maintained, their comfort cannot be ensured. And the Commissioners desire to impress on the emigrants, that on the report which the Surgeon Superintendent may make of the state of their health, and of their conduct on board, must depend very much their success in finding employment in the Colony.

By Order of the Board,

S. WALCOTT.

APPENDIX No. 12.

DR. EDMOND'S VENTILATING APPARATUS.

Dr. Edmond's
Ventilating
Apparatus.

Ships chartered by H.M. Emigration Commissioners are now fitted with Dr. Edmond's Ventilating Apparatus, consisting of a central main ventilator in connexion with air shafts, extending along each side of the emigrant deck, having communications with the timber spaces of the ship's side and ventilating the emigrant deck, as well as the hold, through these. The natural action of this apparatus is to withdraw the foul air from the upper region of the emigrant deck, where it usually collects, the cowl of the main ventilator being turned away from the wind. In calm and in very hot close weather this would be insufficient. To increase ventilation at such times a steam jet from the boiler of the distilling apparatus can be turned on in any required degree, by which a powerful up draft can

be created to carry off the foul air ; but on account of the waste of steam and consequent loss of fresh water the steam jet is not to be used except when really necessary.

Although the apparatus is specially designed to carry off the foul air it may also be used advantageously to diffuse fresh air by turning the cowl to the wind, but the lower hatchways should then be open, or the hatchway or other hold ventilators in action as up-takes. In those ships not ventilated exclusively through the timber spaces the apparatus is equally adapted for use in either mode.

When modifications in the apparatus become necessary, owing to peculiarities in the construction and arrangements of individual ships special explanations will be furnished.

APPENDIX No. 13.

INFORMATION RESPECTING THE USE OF DISINFECTANTS BY DR. ANGUS SMITH AND MR. CROOKES.

EXTRACT from the REPORT on DISINFECTION of Dr. ANGUS SMITH, F.R.S., to the COMMISSIONERS of INQUIRY on the CATTLE PLAGUE.

ABRIDGMENT.

Substances best suited for preventing decomposition.

Acid metallic salts seem so well qualified for this *when water is present*, that they may be said to stand first. Of these again, chloride of zinc stands so high that it may be called the first. The chloride of mercury and sulphate of copper are perhaps superior, but are too expensive for general use. Chloride of iron stands high.

Common salt stands very high in this test ; and as it can be had for a small price, it will no doubt be more used. It seems to have been forgotten that the substance which preserved sound organic matter, would also preserve refuse.

Sulphates are readily decomposed, and give out sulphuretted hydrogen ; but when there is much water, as in sewage, sulphate of alumina acts as an excellent disinfectant, and if succeeded by lime, removes almost all traces of matter oxidizable by the oxygen in chameleon.

Sulphates are excellent disinfectants, and remove the most offensive part of the smell rapidly. If, however, they are allowed to stand long in water, they decompose and give out sulphuretted hydrogen. It is quite a mistake to say that sulphurous acid does not act when combined. Its salts are best used along with the tar acids. The substances disinfected ought to be removed in at least three days, and better if every day. They cannot be used for preserving from decomposition for any great length of time when water is present.

Use of Disinfectants by
Dr. A. Smith
and Mr. Crookes

Chloride of lime has not a good preserving power, but a great destructive power.

The tar acids, otherwise carbolic alcohol and cresylic alcohol or acid, are excellent disinfectants in all cases, but are not equal in water to the metallic chlorides mentioned.

Disinfection where there is little moisture.

In this case the tar acids do not seem to have any rivals, so little is sufficient for the purpose. Dry sulphites mixed with them are an improvement, but of themselves they have a marvellous power of preventing decomposition.

It has been asked, if carbolic acid prevents the activity of infected matter ; will it also destroy it ?—This is not proved to be the case instantly. Pettenkofer (in Allgemeine Zeitung, February 4th, 1866), says, that carbolic acid preserves inert the ferment cells, but when it is removed they become active. It seems true the disinfectant must be used continuously, and the impure matter must be cleared away continuously, whilst soon in time and especially in the earth, the infectious matter will die. We must put it out of the position where it will be dangerous. It is difficult to use enough of any disinfectant to destroy poison where life must be preserved, and impossible to do so instantly where the poison is strong. But these acids render fermenting matter inert, and this is the great object to be first attained. Experiments since made lead me to believe that Pettenkofer must have used very weak acid.

For disinfection, when putrefaction has advanced and the smell is to be removed :

There is perhaps nothing superior or even equal to chloride of lime in this case, unless we except peroxide of hydrogen and permanganate of potash, which are expensive.

If, however, it is not desired to destroy the manure or to leave the mixture moist, it is necessary to try something else ; viz.,—

A mixture of sulphites is good for this purpose with tar acids, but the action is not so rapid or violent as with chloride of lime.

Disinfection of the air.

This is done by—

Muriatic Acid,

Chlorine,

The tar acids chiefly.

The first is made by pouring vitriol on common salt until the space is filled with a distinct smell of the rising vapour.

The second by pouring muriatic acid on black oxide of manganese, or on chloride of potash, or on chlorate of lime. The first plan is probably the cheapest. A very faint trace ought to be kept in the atmosphere, but it ought to be constant at first, and when the cattle are absent it may be used in great excess.

The tar acids are most manageable, and require only to be laid down, when they evaporate gradually and fill the air.

Solid substances containing little moist matter and little organic matter are disinfected by very weak solutions.

EXTRACTS from the REPORT of WILLIAM CROOKES, Esq., F.R.S.,
to the COMMISSIONERS of INQUIRY on the CATTLE PLAGUE.

Disinfection in the widest sense of the term includes deodorization, and means the neutralization or destruction of all substances arising from putrefying organic matter, or emanating from diseased animals either injurious to health or offensive to the sense of smell.

The putrefactive products of animal and vegetable matter are found to consist of some or all of the following gases and vapours :—

Sulphuretted hydrogen,

Phosphuretted hydrogen,

Ammonia,

Phosphorus and nitrogen-bases of complex constitution,

Acetic, butyric, valerianic, &c. acids,

Carburetted hydrogen,

Hydrogen,

Carbonic oxide,

Carbonic acid,

Nitrogen,

Various organized animal and vegetable products of little or no activity, and

The special virus of infection. (The latter in an infected district).

In a more restricted sense, the term "disinfectants" is used to express those agents which destroy organic or offensive matter by oxidation or analogous action ; whilst under the term "antiseptics," are classed those agents which prevent chemical change by destroying the tendency to putrefy. The latter are termed by Dr. Angus Smith, coltyties, from *κωλύω*, I arrest.

Oxydizing disinfectants are by far the best known and most popular, inasmuch as they appeal directly to popular prejudice by destroying the foul odours which are the usual accompaniments of infection, whilst antiseptics have little or no action on these gases. I hope to succeed in showing that this fallacious mode of estimating the relative value of disinfectants and antiseptics is one which does great injustice to the latter.

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* * * * I proceed to investigate the respective merits of the comparatively small number of agents available for disinfection. At the outset it is necessary to strike off at once a whole class of valuable agents which will not meet the requirements of the case. * * * *

Charcoal, chloride of zinc, (Sir William Burnett's disinfecting fluid), solutions of metallic salts, and other similar substances are of very limited use. Moreover, chloride of zinc (and this is probably true of the other metallic chlorides) has been proved to possess no efficacy in destroying specific infective emanations. What is wanted is a volatile and liquid disinfectant, which after first acting on the excreta, the floors, walls, and stalls of the shed, will by its quality of gaseous diffusion, rise into the air, enter the lungs of the animals, pervade the whole building, and attack

the hidden germs of infection which otherwise would escape. In addition to this, the agent must do its work with as little inconvenience as possible to the cattle and their attendants.

Some disinfectants, however suitable in other respects, are too expensive, unsafe, or injurious to health to be used, such are bromine, iodine, per-oxide of hydrogen, hypo-nitric acid, and hyponitrous acid.

The value of excessive heat as a disinfectant is very great, but it is available only in a limited number of cases. It acts in two ways. Heat, to the boiling point of water, continued for half an hour or more, acts as an antiseptic, perfectly destroying the vitality of all germs of contagion or virus cells. In this way clothing and similar substances are conveniently disinfected. Heat, pushed to destruction in the presence of air, acts as a disinfectant by promoting oxidation. The disinfecting value of the combustion of infected substances is too well known to require further notice.

Hydrochloric acid gas (evolved from salt and oil of vitriol) is most irritating to the respiratory organs, and is very inferior in its action to both sulphurous acid and chlorine. Besides, when evolved in whitewashed sheds, it unites with the lime on the walls, forming a highly deliquescent compound, chloride of calcium, which keeps them permanently damp. The employment of a dangerously corrosive body like oil of vitriol should also be avoided.

Oil of tar can also be removed from the list, its value entirely depending upon the small amount of the tar acids it contains (34). To the same class petroleum belongs.

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Petroleum depends for its value upon a small quantity (1 or 2) per cent. of either carbolic acid, or a substance allied to it, and Dr. Angus Smith has shown that when this substance is removed by appropriate means, the purified petroleum has no antiseptic value.

The choice is, therefore, limited to the oxidizing disinfectants, chlorine and ozone, and the antiseptics, sulphurous and the tar acids. These are representative bodies, and numerous trials have been made with them before coming to a conclusion as to their respective merits ; the results being embodied in the following pages.

I am bound to admit that the conclusion to which I have been forced to come, is quite opposed to my preconceived ideas on the subject. I started with a strong bias in favour of chlorine and ozone, but the irresistible force of the arguments derived from my experiments has caused me to alter my opinion.

Oxydizing Disinfectants.

At first sight nothing appears more perfect than the action of a powerfully oxidizing disinfectant like chlorine or ozone, upon noxious vapours and septic germs. In presence of an excess of either of these agents, all organic impurity is at once burnt up and reduced to its simplest combinations ; and could we always rely upon the presence of a sufficient amount of either of these bodies, no other

purifier would be needed. But in practical work on a farm these disinfectants are always very inadequate, except perhaps for half an hour or so during the day ; at other times, the oxydizing agent has presented to it far more noxious material than it can by possibility conquer, and being governed in its combinations by definite laws of chemical affinity, the sulphuretted and carburetted hydrogen, the nitrogen and phosphorous bases, &c., would all have to be burnt up before the oxydizing agent could touch the germs of infection, whilst the continued renewal of the gases of putrefaction would be perpetually shielding the infectious matter from destruction.

It is here that the great objection lies to disinfectants which act by oxidation. If we arrange in a series (*vide supra* Extract 1) the possible substances which may be met with in an infected shed, and gradually mix with them chlorine or oxydized air, we find that those vapours having strong and foetid odours, and which stand at the commencement of the list, are the first to go, whilst the actual virus of the disease, the organized particles which have no odour whatever, are the last to be attacked. But in using disinfectants of this class, the only test of efficiency which a workman would employ, is the sense of smell, and I have on several occasions known it happen that a deodorized shed, to all outward appearances uninfected, was still in reality saturated with infection. It so happens, that the stinking gases of decomposition are of little or no danger in the atmosphere, whilst the deadly virus cells of infectious diseases are inappreciable to the sense of smell. Mere deodorization is, therefore, no protection whatever.

The following experiment tends to illustrate, if not to prove this. Cheese mites were put into water mixed with strongly smelling cheese and sulphuretted hydrogen. Aqueous solution of chlorine was gradually dropped into the mixture from burette. The smell of sulphuretted hydrogen was the first to go, then some smell of cheese, but it required a considerable quantity of chlorine to kill the mites. Exactly the same experiment was now repeated, only leaving out the sulphuretted hydrogen and cheese. The chlorine now had nothing to divert its energy from the cheese mites, which were consequently killed before one-fourth the quantity of chlorine used in the first instance had been added.

Again, oxydizing disinfectants possess little if any continuous action. What they attack is destroyed perfectly, but what they leave has no special resistance to decomposition conferred upon it. They remove the products of decomposition, but they do not take away the power of further putrefaction.

In addition to these general faults possessed by oxidizing disinfectants, the following special objections may be urged against chlorine and ozone.

Chlorine.—This agent requires to be liberated in the gaseous state by a chemical process. This at the outset is an objection, for experience shows that farm labourers are not fit persons to be trusted with the performance of a chemical experiment involving the use of corrosive acids. The smell of chlorine is very irritating to the lungs of diseased or convalescent animals ; and instances have come to my knowledge in which permanent injury has resulted from its employment.

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Another great objection is that gaseous chlorine being absorbed by the whitewash soon forms chloride of calcium (21·28), the deliquescence of which will make the walls of the building permanently damp, and fitted to foster the vitality of virus cells, should they fall upon them.

A plan of fumigation by chlorine has recently been recommended which appears to possess another disadvantage. It is based upon the decomposition of chlorate of potash by hydro-chloric acid. This reaction does not evolve pure chlorine, but a gas called euchlorine (supposed to be a mixture of chlorine and chloric oxide). The properties of this gas are different from those of chlorine, and nothing is known about its special value as a disinfectant. It is dangerously explosive, the act of transferring it from one vessel to another, or even the warmth of the hand, being sometimes sufficient to shatter the vessel to pieces with a loud report.

This agent, it is needless to say, is quite unfit for use on board ship.

If commercial chloride of lime is used as the source of chlorine, there is the additional disadvantage that the compound into which it changes, chloride of calcium, is as before-mentioned (21·26), very deliquescent, and will leave the floors, walls, and especially the wood work washed with it, permanently damp, whilst, if thrown in the solid state on the floor, it rapidly attracts moisture, and becomes unpleasantly wet. It also communicates a disagreeable odour to the hands when it is touched. It is one of the things most easily adulterated, and it would be scarcely possible to supply an ordinary consumer with a test, by which he could ascertain its strength and purity.

Ozone.—This powerful agent attacks all kinds of organic matter with intense energy. But as in the case of chlorine, the specific substance which we most want to destroy, would be nearly the last to go ; and as it would be almost impossible to generate ozone in quantity in an infected shed, its energies would in most cases be spent in doing useless work. When much ozone is present in the air it acts hurtfully on the respiratory organs.

Owing to the extremely poisonous nature of phosphorus, and its ready inflammability, danger would arise from the production of ozone by the slow combustion of this element. Phosphorus, therefore, must be considered as inapplicable to the fumigation of vessels.

Antiseptics.

Oxydizing disinfectants produce their effect by actually destroying infecting substances. Antiseptics act simply by destroying their activity. The former act more energetically upon dead than living organic matter. Antiseptics attack first the opposite end of the scale, and destroy vitality ; they exert little or no action on the foul smelling and comparatively harmless gases of decomposition, but they act with intense energy on the inodorous germs of infection, which these gases may carry into the atmosphere along with them.

If, therefore, the theory with which I started be correct, if the matter which conveys infection from one animal to another be of the nature of an organized germ, if it owe its tremendous power of destruction to the presence in it of vitality, then antiseptics are the only agents fitted to deal with this special case, for they leave almost untouched the crowd of simply odorous gases, and seek out and destroy the one thing to be feared. When I treat of carbolic acid, ample proof of the correctness of this view will be given.

* * * *

The Tar Acids (carbolic and cresylic acids).—These two bodies are so commonly known under the name of acids that I shall continue so to designate them, although by chemists they are more generally classed with the alcohols. They have great similarity, and only within the last few months have they been met with separately in commerce, having hitherto been both called carbolic acid. Creosote, (*κρέας τάξειν*, to preserve flesh) prepared from coal tar, one of the most powerful antiseptics known, was thought to be impure carbolic acid until 1854, when Professor Williamson and Mr. Fairlie in an investigation of it, discovered that it was a mixture of carbolic and cresylic acids. It was then taken for granted that Reichenbach's creosote, from wood tar, had a similar composition, until Hlasiwetz, in 1858, showed that this creosote was a different body from carbolic or cresylic acids. Finally Dr. Hugo Miller, in 1864, discovered that true creosote, and its analogue, guaiacol, belonged to a different class of bodies, and consisted of methyl-oxy-phenic and methyl-oxy-cresylic acids. No experiments on the large scale have yet been tried with true creosote, as I have only been aware within the last few weeks that this compound could be obtained in quantity.

Pure carbolic acid is a white crystalline solid, melting at 34° C and distilling at 180° C; a trace of water or oily impurity renders it liquid, and for disinfecting purposes it is always supplied in this form, to avoid the extra expense and trouble needed for the separation of the last traces of impurity; cresylic acid is liquid, it boils at 203° C, and closely resembles carbolic acid in odour and other properties. Before the commencement of these inquiries it was thought to be of little or no value as a disinfectant, but Dr. Angus Smith has lately shown that it rivals, if it does not surpass, carbolic acid in antiseptic properties. For the present purpose of cattle plague disinfection it is immaterial which acid is used, and to avoid unnecessary repetition I shall use the term carbolic acid to express either acid, or the commercial mixture of the two acids.

From time immemorial, carbolic acid, creosote, or bodies containing them, have been used as antiseptics. Passages in Pliny, read by the light of chemical science, show that the Egyptians used for embalming their mummies a compound made from pitch, which must have contained large quantities of creosote. Carbolic acid is the active agent in tar, which either in its ordinary state, or burnt as a fumigator, has always held high rank amongst disinfectants. Pitch and tar were the most popular medicines in use against the cattle plague, when it visited this island in the last century; the animals being preserved against contagion by having their noses

and jaws rubbed with tar, whilst the cowhouses were disinfected by burning pitch and tar in them (in which process a certain quantity of the vapours of carbolic acid would escape combustion). The almost universal custom of burning gum resins and odoriferous woods in connection with religious ceremonies, may have originally arisen from the disinfecting powers of the creosote in the smoke. The well known efficacy of smoke in preserving meat is entirely due to the presence in it of this agent.

Pitch oil, oil of tar, and similar products, owe their value entirely to carbolic acid (22). This body may in fact be called the active principle of tar, just as quinine is the active principle of bark, or morphia of opium, and it has the great advantage of being easily prepared in any country where coal or wood can be obtained.

Sulphurous acid (which could not safely be used on board ship) probably owes some of its antiseptic value to its affinity for oxygen, whereby the oxidation of the matter under treatment is retarded. It has been suggested that the value of carbolic acid is due to a similar property, and that it acts merely by preventing oxidation.

* * * * *

It may be considered as definitively proved, that the vapour of carbolic acid, in the atmosphere, exerts a special selective power on all minute organisms possessing life. If the contagious matter of cattle plague is possessed of organic vitality as must be now admitted, it will be destroyed, beyond the possibility of revival, when brought into contact with the vapour. French experimentalists have repeatedly tested the influence of carbolic acid on vaccine lymph. They have employed lymph both pure, and mixed with a trace of carbolic acid.

* * * * *

In dealing with the cattle plague, it is possible to try testing experiments of a nature wholly inadmissible where human beings are concerned ; and thus it is feasible to suppose that from the lessons derived from this pestilence, we might obtain insight into means of preventing or even curing zymotic diseases. Thus the theoretical views, the experiments, and results recorded in the preceding pages, possess an interest beyond the immediate sphere of cattle plague. They point forcibly to the possible prevention and cure of all zymotic diseases which attack the human race, and thus possess a far wider and more momentous significance, than if they related only to cattle. Every argument brought forward, every experiment detailed, and every result obtained in the course of this investigation, apply with overwhelming force to such visitations as typhus and typhoid fever, small pox, diphtheria, and to that terrible scourge which for some time past has been threatening our shores.

APPENDIX No. 14.

DIRECTIONS FOR USE OF DISINFECTANTS.

SIR WILLIAM BURNETT'S DISINFECTING FLUID.

OBJECTS.	MODE OF APPLYING THE FLUID.	Proportion of Mixture. Fluid: Water.	Use of Sir W. Burnett's Disinfecting Fluid.
To purify SICK ROOMS and the WARDS of Hos- PITALS, and the be- tween-decks of SHIPS, &c.	Moisten with the diluted Solution a piece of flannel-cloth attached to a long rod, and wave it through the air of the apartment for ten minutes at a time ; in addition to which, the floor should be mopped or sprinkled over with the same dilute Solution, if necessary, several times a day, and a small quantity put into the close-stools and bed-pans. The Water-closets should also be cleansed with it, and a couple of gallons occasionally thrown down, each - 1 to 60 <i>N.B.—For use on board ships, between decks and places where, from imperfect means of ventilation, it may be incon- venient to wet the floors.—Moisten with the diluted Solution thick pieces of flannel-cloth, the thicker the better, and wave them through the air of the apartments for ten minutes, and then suspend them in the most convenient manner to the deck-beams or across the rooms ; and keep other similar pieces of cloth, thoroughly and repeatedly saturated with the same solution, in flat dishes upon the floors.—It is essen- tially necessary that the bilge-water in the holds of vessels be purified agreeably to the instructions given below.</i>		
To purify FEVER WARDS in cases of death.	When a patient dies of fever, the body should be sponged over with the dilute Solution, and the clothes and bedding should be immersed and kept in a sufficient quantity of it, for forty- eight hours, before being washed. The floor should be well mopped over with the Solution. Flannel moistened with it (as before recom- mended) should be waved through the room.	1 to 40	
To purify the CLOTHES, LINEN, &c. of sick per- sons.	Immerse the articles in the dilute Solution as directed in sick rooms - - - - 1 to 60		
To prevent the communi- cation of INFECTIOUS DISEASE.	Sprinkle the dilute Solution over the whole of the floor of the apartment, and very slightly on the coverlid of the patient's bed. The clothes used should be immersed in the Solu- tion and afterwards thoroughly dried. Moisten pieces of flannel-cloth, and use them as directed above - - - - 1 to 50		
To purify the odour of NIGHT-CHAIRS.	Put half a pint of the dilute Solution into the pan previous to its use, and, when emptied, rinse it out with a small quantity - - - - 1 to 50		
To purify BILGE-WATER, and the Holds of SHIPS.	The quantity to be used at a time is twenty gallons of the dilute Solution for each hundred tons of the ship's measurement. It should be poured into the air holes of the ship, so that it may find its way by the timber-holes into the well ; and it should be thrown by a small engine into places where it may be incon- venient to introduce it by other means. A portion may also be poured down the ship's pumps, the boxes being previously removed to allow of its free passage below. The Solution should remain in the ship twenty-four hours. At the expiration of that time the ship should be pumped as dry as possible, the well thoroughly cleansed and washed with the Solution, and the operation repeated as often as required - 1 to 20		

N.B.—When floors and other wood-work are washed with the solution, the use of soap or soda should be avoided immediately before or after its application.

APPENDIX No. 15.

CONDY'S PATENT DISINFECTANT FLUID.

Use of Condy's This is a concentrated fluid, to be diluted, in its various applications, with from Disinfecting 50 to 200 times its own quantity of water, and for its principal uses it furnishes Fluid. from 50 to 200 pints or quarts of Solution at the cost of one pint or quart bottle respectively.

OBJECTS.	MODE OF APPLICATION.	Proportion of mixtures. Disinf. Fluid Water
To purify SICK ROOMS, and the WARDS of HOSPITALS, WORK-HOUSES, PRISONS, and CROWDED PLACES, such as the between decks of SHIPS, FACTORIES, &c.	Moisten, with the diluted Solution, a piece of flannel cloth about 3 or 4 feet square, squeeze it nearly dry, attach it to a long rod, and wave it through the air of the apartment for ten minutes at a time—in addition to which, the floor should be mopped or sprinkled over with the same dilute Solution, if necessary, several times a day, saucers filled with the fluid should be placed in different parts of the room, and a small quantity should be put into the close stools and bed-pans. The Water Closets should also be cleansed with it, and two gallons occasionally thrown down each	1 to 100 <i>N.B.—For use on board ships, between decks, and places above, where, from imperfect means of ventilation, it may be inconvenient to wet the floors.—Saturate with the diluted Solution thick pieces of flannel-cloth, about 3 or 4 feet square, and the thicker the better, and wave them through the air of the apartments for ten minutes and then suspend them in the most convenient manner in the deck beams or across the rooms, and keep other similar pieces of cloth thoroughly and repeatedly saturated with the same Solution, in flat dishes upon the floors.—It is essentially necessary that the Bilge water in the holds of vessels be purified agreeably to the instructions given below.</i>
To purify FEVER WARDS or Rooms, in cases of death from a contagious disease; or to prevent offensive effluvia arising from a dead body.	When a patient dies of fever, the body should be sponged over with the dilute Solution, and the clothes and bedding should be immersed and kept in a sufficient quantity of it for forty-eight hours before being washed. The floor should be well mopped over with the Solution. Flannel, moistened with it as before mentioned, should be waved through the room	1 to 100
To purify the CLOTHES, LINEN, &c. of sick persons.	Immerse the articles in the dilute Solution as directed above	1 to 200
To prevent the communication of INFECTIOUS DISEASES.	Enclose the patient in a screened berth with blankets kept saturated with the diluted Solution. Sprinkle some of the same Solution over the whole of the floor of the apartment, and slightly over the coverlid of the patient's bed. The clothes should be immersed in the Solution, and afterwards thoroughly dried. Moisten pieces of flannel cloth, and use them as directed above	1 to 100
To deprive NIGHT-CHAIRS of offensive odour.	Mix half a wine glassful of the disinfecting fluid with about a pint and a half of fresh or salt water, and put it into the pan previous to its use, and when emptied, rinse it out with a small quantity	1 to 100
To purify the atmosphere of Rooms in which there are DEAD BODIES.	Wash the body occasionally with the diluted Solution, which will remove all unpleasant smell, and retard putrefaction	1 to 50

OBJECTS.	MODE OF APPLICATION.	Proportion of mixtures. Disinf. Water Fluid.
To disinfect CESSPOOLS and open PRIVIES.	Mix a quarter of a pint of the concentrated fluid with about six gallons of water; with this thoroughly wash down the walls of the cesspools and cover the surface of the soil with the Solution. This will generally suffice to deodorize a surface of from 30 to 40 square feet; a larger surface will require a proportionate increase in the quantity of diluted fluid	1 to 200
To disinfect WATER CLOSETS, DRAINS, URINALS, &c.	Pour all round the inside of the pan (or through the drain, as the case may be), a sufficient quantity of the fluid mixed with water in the proportion of a quarter of a pint to about six gallons	1 to 200
To purify BILGE WATER in a SHIP'S WELL.	Pour down the ship's pumps (the boxes being removed to allow of its free passage below) five gallons of the diluted Solution for each ton of the ship's measurement Or one pint of the disinfecting fluid mixed with fifty pints of fresh or salt water for every 10 tons measurement.	1 to 50
To purify the INTERIOR or HOLD of a SHIP.	The quantity to be used at a time is twenty gallons of the diluted Solution to every 100 tons of the ship's measurement Or one pint of the disinfecting fluid mixed with 100 pints of water for every 5 tons of the ship's measurement.	1 to 100
To purify STAGNANT WATER, and on board ship when fresh water cannot be obtained.	N.B.—The Solution should be poured into the air-holes of the ship. It should be thrown about the interior of the hull, so that every part may be well wetted with the Solution. The Solution should be allowed to remain in the ship twenty-four hours. At the expiration of that time the ship should be pumped dry, the well thoroughly cleansed and washed with the Solution, and the operation repeated when found necessary.	
To purify MATS and FLOORS.	Pour into a hogshead of offensive drinking water one wine glassfull of the concentrated fluid, stir it up with a stick or lath. Generally this quantity will render it as sweet as fresh water; should it require another half wine glassfull, add it. If this water can be filtered afterwards it will be better	1 to 4000
To ensure PURITY of WATER employed for drinking, which frequently contains much organic matter.	Sprinkle the diluted Solution as last directed, after and before sweeping. In addition to cleanliness, this will ensure sweetness, by purifying the air and whatever it comes in contact with	1 to 100
To cleanse WOUNDS, ULCERS, CANCERS, &c.	<i>See Instructions to purify Stagnant Water.</i> In the present case, as long as organic matter still remains, add the fluid—the purple fluid preferred. If a trace too much be added, stir it well up in the cask, or immerse a stick or lath, and the colour will disappear. Let it stand, and any impurity will subside; or filter. Sponge the offensive part with the diluted fluid until all odour disappears	1 to 100

APPENDIX No. 16.

Directions for working Normandy's Apparatus. INSTRUCTIONS FOR WORKING WATER DISTILLING APPARATUS.

DR. NORMANDY'S MARINE AERATED FRESH WATER APPARATUS.—Applicable only to the Improved Machines, numbered 205 and upwards.

Fig. I. shows the construction of the double distillation apparatus, without reference to the actual form of its parts, in numbers 205 and upwards.

Fig. II. Front view of the apparatus.

[See Diagrams annexed.]

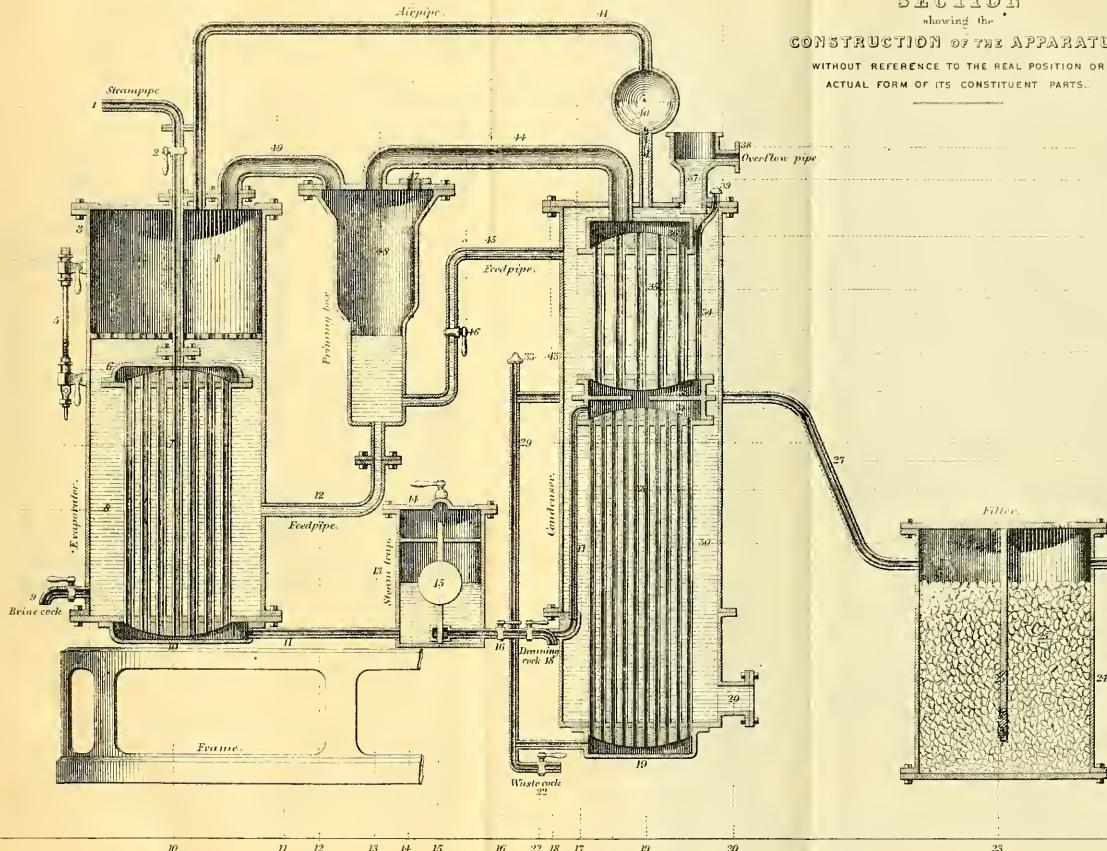
DESCRIPTION OF FIGURE I.

1. Steam pipe leading the steam from the boiler to the pipes (7) of the evaporator (3).
2. Steam cock for regulating the quantity of steam to be admitted to the pipes (7).
3. Evaporator. A cylinder containing a sheaf of pipes (7).
4. Steam room, in which the air from the aërating pipe (41), mixes with the same produced from the water (8) surrounding the pipes (7).
5. Glass water-gauge. The sea water should be kept about half way in the glass. If it be too low open the feed cock (46). If too high, open the brine cock (9).
- 6 & 10. Caps covering the ends of pipes (7) of the evaporator (3).
7. Pipes in which the steam from the boiler is condensed. While the steam in the tube (7) is being condensed, steam is generated from the water (8) round them ; this steam mixes in the steam room (4) with the air poured into it from the air pipe (41), and then passes with the air through the tubes (49) and (44), into the condenser (43).
- *8. Sea water, evaporated by the heat from the pipes (7) of the evaporator (3).
9. Brine cock from which a small stream of sea water should continually be running. It is advisable now and then to open this cock quite full to expel any deposit, and occasionally it should be left open to empty the evaporator.
10. See No. 6.
11. Pipe leading the non-aërated fresh water from the lower cap (10), into the steam trap.
12. Feed pipe leading the sea water from priming pot (48), to the evaporator (3).

* It may be observed here, that although the sea water round the pipes (7) in the evaporator (3) is at a boiling temperature when the Apparatus is in full operation, yet it will condense the steam in the pipes (7), because that steam coming from the boiler, and being under pressure, is at a higher temperature than the sea water round the pipes, which is not under pressure ; steam being condensed by water at any temperature, if lower than the steam to be condensed.

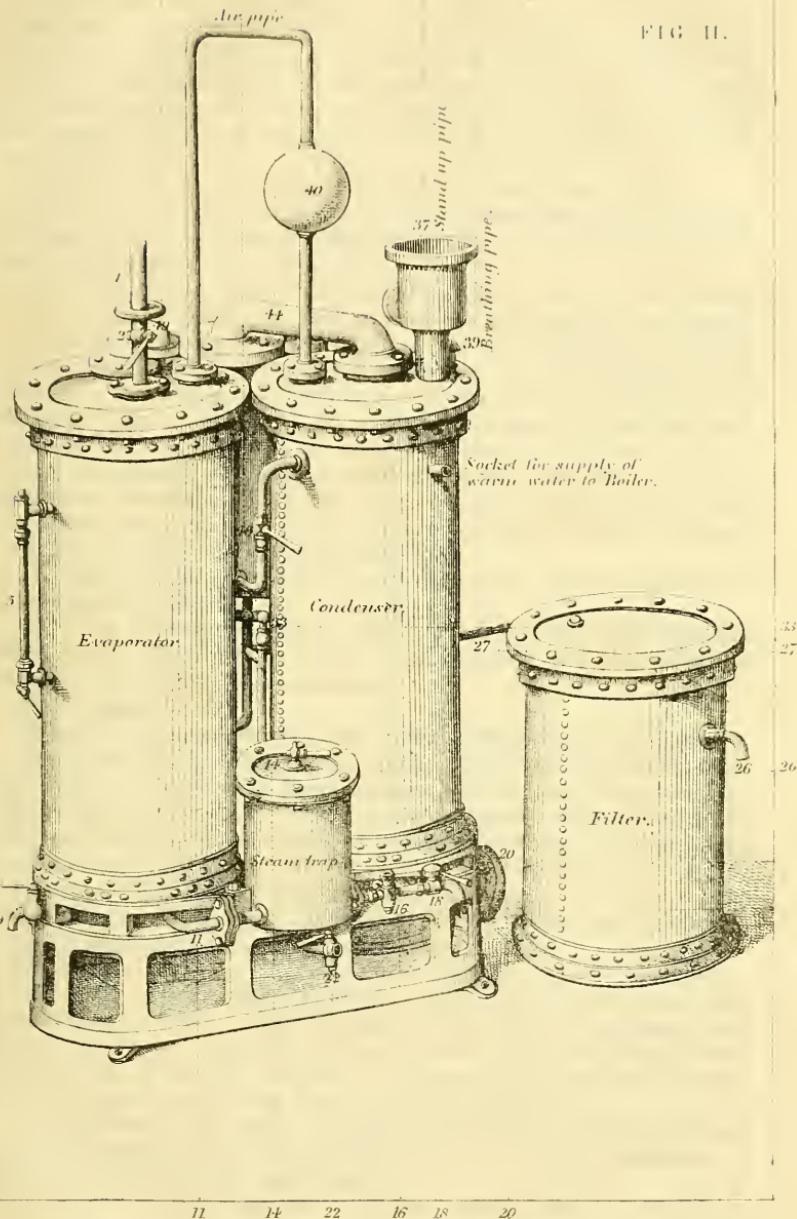
FIG. 1.

SECTION
showing the
CONSTRUCTION OF THE APPARATUS.
WITHOUT REFERENCE TO THE REAL POSITION OR
ACTUAL FORM OF ITS CONSTITUENT PARTS.



49 46 44 10 37 39

FIGURE 11.



FRONT VIEW OF THE DOUBLE DISTILLATION APPARATUS.

13. Steam trap, containing a float (15), to prevent any steam from passing out of the evaporator with the condensed water. It is provided with a plunger, so that when the trap contains only steam, the plunger closes the exit pipe from the trap; but as soon as enough condensed water has accumulated to buoy the float, it can escape as fast as it is produced through cock (16), but no steam can follow.

14. Pet cock on the steam trap (13), for the escape of air.

This pet cock should be left slightly open so that a small wreath of steam may issue from it. It may be open two or three times a day, in order to see that it is clear.

15. Float already described under No. 13. If on opening the pet cock (14) water is seen to flow in any quantity and for any length of time, it is a sign that there is an obstacle in pipes (21), (29), or (27), or in the filter, or that the float sticks, or is waterlogged; the remedy is to remove the obstacle if there be one, or if the fault lies with the float, to repair it. If necessary, remove it altogether, and regulate by means of the cock (16), in such a way that as little steam as possible should pass through it, with the water. If the condensed water should fill the steam trap (14), open cock (16) full for a few moments, whereupon the accumulated condensed water will pass into the refrigerating pipes (28).

16. Cock which should be always kept full open, except in the cases named in No. 15.

17. Pipe leading the water from the steam trap (13) into the refrigerating pipes (28), in which it mixes with the aërated water from the pipes (35) of the condenser.

18. Draining cock.

19—31. Caps covering the ends of the refrigerating pipes (28).

20. Entrance pipe for the sea water. On working the pump the sea water is forced into the condenser, round the lower sheaf of pipes (28), in which the fresh water is cooled, thence round the partition (42), the upper sheaf of pipes (35), of the condenser, and up the stand pipe (37). This pipe (20) is provided with a plug for the purpose of emptying the condenser.

21. Pipe for the issue of the mixed waters (the aërated and non-aërated) from the refrigerating pipes (28).

22. Waste cock for the discharge of dirty water. This cock should always be left open *when the Apparatus is not at work* and when frosty weather is apprehended, for the pipes being then quite empty cannot be damaged by frost, which otherwise might burst some of them if left full of water. This cock will, if opened, prevent any dirty water or priming from passing to the filter.

23. Partition in the filter, so that the fresh water entering through pipe (27) passes under it, and finally issues at (26) in the state of perfect and cold aërated fresh water.

24. Filter for receiving the condensed water from the evaporator and condenser. In passing through this filter the condensed water loses its odour and taste. The bottom is provided with plugs, one of which should be within reach for draining the filter. It should always be drained in frosty weather.

25. Charcoal occupying each side of the filter (24). The charcoal

will last for ever. Should it at any time become soiled by rust or salt water, open the plugs at the bottom of the filter and pour a quantity of fresh water into it, when the charcoal, being thus washed, will be found as effective as before.

26. Pipe for the final exit of the perfect fresh water to the tank.
27. Pipe through which the mixed waters enter the filter (24).
28. Pipes for the purpose of cooling the fresh water from the condenser and evaporator.
29. Pipe through which the fresh water ascends in order to keep the pipes of the refrigerator always full.
30. Sea water surrounding the refrigerating pipes, by which the distilled waters are cooled.
- 31—19. Caps covering the ends of pipes (28) in the refrigerator.
- 32—36. Caps covering the ends of the pipes (35) in the condenser (43).
33. Perforated knob in communication with pipes (29 and 27), to prevent their acting as a syphon.
34. Sea water surrounding the condensing pipes.
35. Pipes for the purpose of condensing the aërated steam from the evaporator (3).
- 36—32. Caps covering the ends of pipes (35) in the condenser (43).
37. Stand pipe. The sea water which is forced through the condenser by means of the pump is thus raised above it, in order to keep it quite full.
38. Overflow pipe for the escape of the sea water.
39. Breathing pipe. A small pipe, one end of which opens in the lower cap (32) of the condensing pipes (35), for the excess of air to escape.
40. Air ball on the air pipe (41) to prevent the sea water forced into the condenser from passing into the evaporator. The steam from the evaporator (4) entering the condensing pipes (35) the sea water surrounding them is thereby heated, and as the air contained in the sea water is separated from it by the heat, it ascends to the top of the condenser and passes through the air pipe as stated below.
41. Air pipe leading the air which separates from the sea water round the pipes (35) of the condenser (43) into the steam room or space (4) in the evaporator (3).
42. Partition separating the pipes (35), which act as a condenser from the pipes (28), which act as a refrigerator, so that the sea water in the lower portion of the cylinder is kept in a much colder state.
43. Condenser. A cylinder containing two sheafs of pipes, an upper one (35) for condensing, and a lower one (28) for cooling. The sea water enters the cylinder at (20) in its coldest state, and circulates round the pipes (28), so that the water in them is cooled to the temperature of the sea water outside.
44. Pipe conducting the mixture of steam and air from the priming pot (48) into the pipes (35) of the condenser (43).
45. Feed pipe, one end of which is in the condenser and the other in the priming pot (48). Through this feed pipe (45) the sea water is led from the top of the condenser through the priming pot (48), into the evaporator.

46. Cock of the feed pipe.

47. Opening in the priming pot for the exhaust pipe of the donkey pump, so that this steam may be converted into fresh water.

48. Priming pot. A pot which receives any salt water or priming which may be carried with the steam through pipe (49). In such case the priming is returned to the evaporator (3), through pipe (12).

49. Pipe leading the mixture of steam and air from the steam room (4) into the priming pot (48).

INSTRUCTIONS FOR WORKING DR. NORMANDY'S APPARATUS.

(Applicable only to the improved machines, numbered 205 and upwards.)

Get steam up in the boiler, start the pump ; the sea water will then enter the condenser at (20), fill it and pass through cock (46) into the priming box (48), and thence into the evaporator (3), where it should be allowed to rise half-way in the glass gauge (5), when the cock (46) should be shut. The Apparatus having its proper quantity of sea water, open the steam cock (2),* and likewise the waste cock (22) ; after a while open also the small pet cock (14). On opening this pet cock (14), some water will perhaps flow ; but presently air and steam only will issue from it. It should then be left *almost* shut, so as to leave room for the smallest possible wreath of steam. As soon as the steam cock (2) is open, the steam from the boiler will rush into the sheaf of pipes (7) of the evaporator (3), in which pipes it will be condensed by the sea water which surrounds them, and then flow through pipe (11) into the steam trap (13), lift up the float (15), pass through cock (16), ascend pipe (17) into the upper cap (31) of the refrigerating sheaf of pipes (28), and flow out at the waste cock (22). If the apparatus has been for some time without working, this water will have a rusty colour, wherefore it should be left running until it is clear, in order not to foul the filter. As soon as the water flows in a clear state, shut the cock that it may pass into the filter.

But the heat within the pipes (7) of the evaporator (3) soon brings the sea water round them to the boiling point. Steam then passes from this water through pipe (49) into the priming pot (48), and from the priming pot (48) through pipe (44) into the pipes (35) of the condenser (43), and being there condensed falls into the lower cap (32), and mixes with the water from the condensation of the steam of the boiler brought by pipe (17), and both waters pass into the filter. As soon as the water of the evaporator begins to boil, open the brine cock (9), to permit a small quantity of brine to be *constantly* flowing from it, adjust the feed cock (46), to keep the gauge glass about half-full.

* This steam cock (2) should be opened gradually to such a degree as will not cause the water in the boiler or evaporator to boil furiously, which might produce extraordinary priming. Priming can be easily prevented both in the boiler and evaporator by shutting the steam cock (2) more or less.

If the attendant take care to adjust the brine cock (9), so that the flow of the brine is at the rate of *about one third of the whole fresh water produced*, there will be no chance of diminishing the evaporation, nor danger of incrustation.

If the fresh water produced is not sufficiently cool, work the donkey pump faster.

If any steam or water is seen to issue from the breathing pipe (39), it is a sign that too much steam is admitted into the apparatus ; therefore reduce the quantity to the proper degree.

When not at work the Apparatus should be completely emptied and drained, and if frost be anticipated the filter also should be drained.

If a tube, where it can be got at, should become leaky, the leak can always be stopped by wrapping round it a piece of canvas or of calico smeared with red lead, paint, or even flour and water made to the consistence of thin paste, and firmly coiling a string over the whole.

If after shutting the steam cock (2) and cock (16) salt water collects in the steam trap, it is of course a sign that the leak exists in the pipes (7) of the evaporator. But if after opening the waste cock (22) salt water flows from it, it is a sign that the leak is either in the refrigerating pipes (28) or the condensing pipes (35). In either case remove the cylinder of the evaporator or of the condenser, plug the exit pipe of the bottom cap, and fill the whole sheaf with water or with steam, when the water or steam thus introduced will escape at the defective point. If the defective tube can be got at, the leak may be instantly stopped, either by means of canvass, &c., or by plugging it at both ends with a wooden plug or cork. Do not mistake *priming* for *leakage* ; no priming can take place, of course, if the steam cock (2) is closed. These instructions are given merely to provide against accidents, which, though of course possible, yet have never hitherto happened.

Either the evaporator or the condenser of a Double Distillation Apparatus may be converted into a Single Distillation Apparatus, a double security being thus offered by that form of Apparatus. This may be done as follows :—

If the evaporator has become disabled, remove or plug up pipe (49), close the feed cock (46) between the evaporator and the condenser, and connect the steam pipe (2) with the entrance (49) of the priming box (48).

If the condenser has become disabled, remove or plug up pipe (44), then open fully the feed cock (46) between the evaporator and the condenser ; when the evaporator has become completely filled with sea water let water be constantly running full bore through the brine cock, and the evaporator will thus be converted into a Single Distillation Apparatus. In that case remove pipe (27), and connect the filter with cock (16) of the steam trap.

INSTRUCTIONS FOR THE MAN IN CHARGE.

All the Cocks are stamped with their respective Names.

TO WORK THE APPARATUS.

Start the donkey engine, and pump the sea water into the condenser until it runs from the overflow pipe, marked 38.

Open the feed cock of the evaporator, and always keep the sea water half-way up the gauge glass.

Open the steam cock of the evaporator gradually, to avoid priming.

Open the pet cock of the steam trap, and when steam is seen to issue from it, shut it off almost entirely.

Open the waste and draining cocks until the fresh water runs clear, then shut them, and always keep cock 16 full open when at work.

If the fresh water produced is not sufficiently cool, work the donkey pump faster.

Open the brine cock to the point indicated by the scratch on its shell.

Priming is the result of too much steam being turned in the apparatus, and can always be avoided by shutting off the steam cock more or less.

Take care that the brine cock is always slightly open ; open it full for a few seconds every half-hour to keep it clear, and lower the water about 3 inches in the gauge glass.

When the apparatus has done its work, empty and drain it thus :—

Open the brine cock full.

Open the waste cock full.

Open the draining cock full.

In frosty weather open the plug
of the large pipe.

INSTRUCTIONS FOR THE BOILER.

All the Cocks are stamped with their respective names.

Fill the boiler to the middle of its gauge glass.

Get up steam.

Open the blow-off cock of the boiler once every two hours, so as to lower the water about 2 inches in the gauge glass.

Keep the ashes in the ash-pan always wet, to prevent the deck from getting hot.

Keep the water as much as possible half-way up the gauge glass, and never let it go down out of sight ; should it do so, draw the fire at once.

There is a safety lead rivet fitted in the crown of the fire box, and should the water get below it, the rivet will melt, and steam issue from the hole, showing neglect on the part of the man in charge. The hole may be stopped by another lead rivet, or even by a wooden plug.

Priming is the result of too much steam being turned in the apparatus, and can always be easily avoided by shutting off the steam cock more or less.

Open the scum cock full for a few moments, once every two hours, or when the water appears dirty in the glass.

There is attached to the boiler a priming-pot for collecting any priming or salt-water which may be carried over with the steam. It communicates with the ash-pan, and should be blown off occasionally to clear itself of any scum or priming, and wet the ashes.

Once a fortnight the boiler must be completely emptied. The mud-hole and man-hole doors must be removed, the incrustation must be chipped off, and the inside of the boiler completely cleansed. If this be not attended to, you will not have your proper quantity of fresh water, and the boiler will be liable to blow up.

LIST OF ARTICLES AND STORES TO ACCOMPANY NORMANDY'S WATER DISTILLING APPARATUS.

The Articles to be of a suitable size and description for the Machine.

1 Set Stoking Tools.	2 $\frac{3}{4}$ Connections.
1 Scaling Tool.	2 1-inch do.
1 $\frac{1}{2} \times \frac{5}{8}$ Spanner.	1 $\frac{3}{4}$ -inch Bend.
1 Shifting Spanner.	1 1 " do.
1 Float for Steam-trap.	1 $\frac{3}{4}$ " Elbow.
Box for " do.	1 1 " do.
1 Set of Fire-bars.	1 $1\frac{1}{2}$ " do.
1 14-inch Flat Bastard File.	1 Slide Rod for Donkey Pump.
1 14-inch half-round " do.	1 $\frac{1}{2}$ pint Pneumatic Oil Can.
1 10-inch round " do.	5 lbs. Spun Yarn.
3 File-handles.	10 lbs. Cotton Waste.
2 Cold Chisels.	2 Sets 1 $\frac{1}{2}$ -inch Patent Joints.
1 Hammer and Handle.	1 Deal Box, with iron handles, hasp, and staple.
1 Pair Patent Gas Tongs.	1 Padlock for do.
1 Soldering Iron.	2 Gallons Machinery Oil.
10 lbs. Solder.	Can for do.
2 " Resin.	1 Oil feeder.
6 Gauge Glasses.	1 Small Vice.
24 India-rubber Gauge Glass Washers.	1 Ratchet Brace.
30 $\frac{1}{2}$ -inch Bolts and Nuts.	4 Drills.
12 $\frac{3}{8}$ -inch Bolts and Nuts.	12 Sheets of Emery Cloth.
36 India-rubber Washers.	

MESSRS. WINCHESTER AND GRAVELEY'S WATER DISTILLING APPARATUS.

The man and mud hole plates should be taken off the steam boilers every 12 or 14 days, to clear away any deposit that may accumulate.

The density of the sea water in the boiler should be tested when at work by the salinometer every two hours, which should not exceed $\frac{2}{32}$. If this is attended to, no corrosion would take place.

The donkey pump gives double the quantity of salt water required for condensation. The cock fitted to feed on the donkey pump suction, while at work, should be kept fully open. The scum cock should also be regulated so as to keep the sea water in the steam boiler half way up, the water gauge glass placed on the back of it. If this is done the water will be kept up to the proper density, and incrustation will be prevented.

The safety valves and gauge cocks should be properly cleaned and never allowed to set fast; this can be easily ascertained by moving the levers.

Care should be taken that the priming box on the top of the boiler, with the gauge glass fitted, is not allowed to fill with water, or it would go off with the steam and saturate the filterer.

Should the filterer become saturated, the quickest way to restore it is to take off the top and wash the medium with fresh water.

Instructions
for working
Winchester and
Graveley's
Apparatus.

LIST OF ARTICLES AND STORES TO ACCOMPANY WINCHESTER AND GRAVELEY'S APPARATUS.

The Articles to be of a suitable size and description for the Machine.

3 Double-ended Spanners.	2 Tin Cases for Glasses.
1 Shifting Screw Spanner.	5 lbs. Spun Yarn.
1 Double-ended Spanner for Man-hole.	10 lbs. Cotton Waste.
1 14-inch flat Bastard File.	1 half-pint Pneumatic Oil Can.
1 14-inch half-round do.	1 Oil Feeder.
1 10-inch round do.	2 Gallons Engine Oil and Can.
3 File-handles.	1 Lamp for Engineer and Ball of Cotton.
2 Cold Chisels.	2 Sets Fire Bars.
1 Hammer and Handle.	1 Roll Patent Packing.
1 Pair Patent Gas Tongs.	1 Scaling Tool.
1 Large Bench Vice.	7 Screws, Assorted Bolts, fitted.
1 Ratchet Brace.	5 Screw Studs.
4 Steel Drills.	9 Assorted Nuts, fitted.
1 Soldering Iron.	1 Feed Pipe.
10 lbs. Solder.	1 Tube Brush.
2 lbs. Rosin.	1 Deal Box, with hasp, staple, handles, and Padlock.
12 Sheets Emery Cloth.	1 Salinometer.
1 Pair Gun Metal Slide Blocks.	1 Salinometer Pot.
2 Distance Pieces and Bolts.	
12 Gauge Glasses.	
24 India Rubber Packing Rings.	

DETAILED DESCRIPTION and INSTRUCTIONS for working CHAPLIN'S PATENT "SHIP'S ENGINE," and "DISTILLING APPARATUS."

FOR ENGINE.

The Steam Boiler, which is of a dome form internally, should be kept clean, and free from deposit of salt or sediment, by blowing off, through the blow-off cock, at water surface, at least once in the hour (when using salt water), blowing about two inches at a time to remove the black surface which may be observed by the glass gauge : it should be blown off at bottom daily when in constant work ; the boiler should also be emptied occasionally (not less frequently in any case than once in 28 days), the man-hole door taken off, and the deposit cleared away from the bottom spaces by the mud-hole doors ; the level of water should always be visible in the gauge glass ; the supply is regulated by the feed-cock.

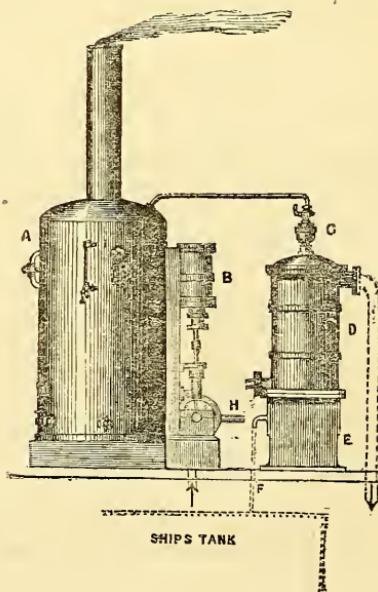
The steam pressure should not at any time exceed 50 lbs. per square inch, as shown by the pressure gauge ; the spring balance on safety-valve is to be screwed down to the pressure required, from 30 to 50 lbs. per square inch, according to the work to be done ; by careful firing, and attention to the feed water, the steam pressure and level of water in boiler may be kept nearly uniform, the burning of the fuel and the pressure of steam may be regulated by opening or closing the damper in funnel.

Instructions
for working
Chaplin's Apparatus.

The Steam Engine, the engine should be kept well packed at the stuffing boxes with rope yarn, or gaskin, soaked in tallow, lapped round the piston rod, pump plunger, and valve spindle ; the bearings and working parts must be kept lubricated with oil regularly. If the engine has been at rest for some time, the pet cocks on cylinder should be opened, to allow water to escape before starting, and closed after the engine has made two or three strokes. The steam is admitted to or shut off from the engine by turning the screw wheel, so as to raise or let down the valve. With each apparatus is required a complete set of screw keys, hammers, chisels, files, oil cans, and rope yarn, packings, &c. These are supplied by us in a suitable tool box.

CHAPLIN'S PATENT DISTIL-AËRATOR.

PATENT DISTILLING APPARATUS for connecting to BOILERS, producing FRESH and PURE WATER, fit for immediate Use, from SALT WATER.



The woodcut represents an Improved Distilling apparatus, by means of which the water is at once (during the process of distillation) thoroughly aërated, and made fit for drinking, as it is discharged from the apparatus equal to the purest spring water.

The condenser consists of an iron cylinder, having an internal

copper worm, tinned inside, which receives the steam from the boiler, through the aërating cup.

The steam from the cylinders is also discharged into the worm.

The following is an extract of Dr. Penny's report on the working of the apparatus :—

The aëration of the water is effected by a small cup-shaped closed vessel, of brass, having its upper rim perforated with holes. The air rushes through these openings into the condenser as soon as the steam is turned on, and thoroughly commingling with the steam at the moment of condensation, the distilled water becomes fully aerated. I have watched the aërator for some time in actual operation, and I have satisfied myself that in the simplicity, regularity, and efficiency of its action, it leaves nothing to be desired; it is characterized by the small space which it occupies, being only about three inches in diameter, and by the absence of all complicated arrangements; and it has the advantage of being not only self-regulating, but of working independently of the party having charge of the process.

The Distil-Aërator is so simple in its action that no particular instructions are necessary in regard to it. But it is *necessary* to avoid the use of red or white lead in making the steam pipe joints, which would impart an unpleasant taste to the water.

The Filter may be cleaned occasionally, simply by removing and washing the charcoal.

It is not necessary, for distilling purposes, to maintain a higher steam pressure in the boiler than is sufficient for the engine driving the circulating pump, as the process can be carried on at any pressure.

When not in use, the air-valve of distil-aërator should be closed.

LIST OF ARTICLES AND STORES TO ACCOMPANY CHAPLIN'S APPARATUS.

The Articles to be of a suitable size and description for the Machine.

- 8 Spanners, assorted from $\frac{3}{8}$ to $2\frac{1}{2}$ inch.
- 1 Clipping Hammer.
- 3 Flat Cast-steel Chisels.
- 2 Cross cut do.
- 1 Round nose do.
- 6 Files, 2 flat 14 and 16, 2 half round 14 and 16, 2 round $\frac{1}{2}$ and $\frac{5}{8}$.
- 1 Ratchet Brace and 5 Drills, assorted from $\frac{3}{8}$ to 1 inch, clearing sizes.
- 6 Glass Tubes for Water Gauge.
- 14 India-rubber Washers for ditto.
- 4 Cup Leathers for Circulating or Sea Pump.
- 1 Piece flat Leather, about $\frac{1}{4}$ -inch thick and 1 foot square, for Pump Valves.
- 1 foot Copper Wire for Rivets, $\frac{1}{4}$ inch diameter.
- 4 Hook Rods for cleaning Boiler.

18 Screw Bolts and Nuts, assorted lengths and sizes, assorted $\frac{3}{8}$ to $\frac{7}{8}$.
 1 5-inch Vice.
 1 Set Firing Tools, shovel, poker, and slice.
 1 Pair Smith's Tongs.
 1 Pair Spring Tongs.
 1 Set spare Fire Bars complete, and 8 extra middle bars.
 1 $\frac{1}{2}$ -pint Oil Feeder.
 1 1-gallon Oil Can.
 9 Gallons Machine Oil.
 56 lbs. Cotton Waste.
 10 lbs. Hemp Packing.
 1 Soldering Bit.
 3 lbs. Solder.
 4 lbs. Resin.
 $\frac{1}{2}$ pint Soldering Fluid, prepared Muriatic Acid and Zinc.
 2 lbs. thin Copper Wire.
 1 Piece thin sheet India-rubber for Joints, about 2 feet square.
 1 Tool Box with Lock and Key.

N.B.—It is very important that no white or red lead be used in making joints in any part of the Apparatus to which the condensed water has access.

APPENDIX No. 17.

Test for purity
of Water.

“TEST OF THE PURITY OF WATER.—The relative quantity of dissolved and suspended organic matter can be readily tested by the aid of permanganate of potash [Condy’s Fluid]. This substance, which gives to pure water a beautiful pink colour which lasts for a long time, is readily decomposed by organic matter, and its colour goes. It may be thus employed for the purpose of detecting the relative impurity or two or more waters. A certain quantity of the permanganate of potash being added to equal quantities of different waters, that water will be the freest from organic impurities which retains the deepest colour of the permanganate. Waters which rapidly decompose the permanganate are not fitted for drinking purposes.”—Paper of Instructions for Popular Information, issued by the Government Department of Science and Art.

The purity of *distilled* water may be tested by dissolving in it a small quantity of nitrate of silver, which will not discolour the water if it is pure.

APPENDIX No. 18.

EXTRACT of REPORT by MR. ARTHUR GOULLET, Surgeon Superintendent of the "SPITFIRE," (1863) on the Appearance of SMALLPOX in that Vessel.

"Two days after sailing a boy, aged 9 years, was attacked with smallpox. He had been vaccinated by me previous to sailing, but the disease was then in a state of incubation and had been brought from Leeds. He was immediately placed in the male hospital, with his father to attend upon him. The windows were barred with iron to prevent things being passed out, and the door kept locked, the key being in my possession. No communication was allowed either with his friends or any other of the emigrants. The proper food and medicines were passed in, but nothing was allowed to be passed out, and dirty linen was thrown overboard. No person was allowed near the door or windows of the hospital, and the chinks in the bulkhead separating it from the female hospital were carefully caulked. Every possible means of ventilation and disinfection were unremittingly used, and I was the only person who had any communication with the patient and his father, and I used every precaution so as not to carry the contagion to others. The father was allowed air and exercise on the lee side of the poop at night, after all the other emigrants were sent below; and when the boy was convalescent, and disquamation had commenced, frequent baths in casks of warm fresh water were used, and after every bath fresh bedding and clothing made of blankets were supplied, and the old ones thrown overboard. The boy was not allowed to leave the hospital until disquamation had entirely ceased. He is much pitted. By these means the disease was happily prevented from spreading, although there were many unprotected people on board, for the vaccine lymph supplied me was ineffectual in twenty-four cases out of twenty-five."

APPENDIX No. 19.

EXTRACT FROM THE JOURNAL OF MR. MACDONALD ON HIS VOYAGE TO BRITISH GUIANA IN THE SHIP UTOPIA, IN 1861-2.

"The diseases to which these Indian Emigrants are mostly subject are, dysentery and diarrhoea; cholera may be expected to occur in ships leaving Calcutta, but it seldom spreads. In my own experience I never had more than two or three cases in my ship, this being my fifth voyage. Dysentery is most to be dreaded, and when many junglies are on board it may well be so, for the mortality among them is always 6 or 8 per cent. more than the copper-coloured inhabitants of India. In treating these and other diseases, care should be taken not to give medicine in large doses, especially narcotics, sedatives, and drastic purgatives; one third less than the doses usually given to Europeans is quite sufficient for these people."

APPENDIX No. 20.

DR. HENRY SILVESTER'S METHOD of INDUCING RESPIRATION in SUSPENDED ANIMATION is contained in the following Rules.

Dr. Silvester's
method of
inducing
Respiration.

RULE I.*

To adjust the Patient's position.

Place the patient on his back, with the shoulders raised and supported on a folded article of dress, and secure the feet.

RULE II.

To maintain a free Entrance of Air into the Windpipe.

Wipe the mouth and nostrils. Draw forward the patient's tongue, and keep it projecting beyond the lips (if the lower jaw be gently raised, the teeth may be made to hold the tongue in the required position).

RULE III.

To imitate the Movements of Deep Respiration.

Raise the patient's arms upwards by the sides of his head, and then keep them stretched steadily, but gently, in the direction upwards and forwards for a few moments. (This action enlarges the capacity of the chest, by drawing up the ribs, and induces inspiration.)

Next turn down the patient's arms, and press them gently and firmly for a few moments against the sides of the chest. (This action diminishes the cavity of the thorax, by pressing down the ribs, and produces a forcible *expiration*).

Repeat these measures alternately, deliberately, and perseveringly fifteen times in a minute, until natural respiration is established.

RULE IV.

To induce Circulation and Warmth, and to excite Inspiration.

Rub the limbs from the extremities towards the heart. Occasionally dash cold water in the patient's face. Replace wet clothing by warm and dry covering.

By the above method a volume of air may be alternately inspired and expired, even after death, which varies, in different subjects, from 9 to 44 cubic inches.

*. Extracted by permission from "The Physiological Method of Inducing Respiration in cases of Drowning, Still-birth, Suffocation from Chloroform, &c.—By Henry R. Silvester, B.A. M.D., London."

APPENDIX No. 21.

INSTRUCTIONS TO CLERGYMEN PROCEEDING AS CHAPLAINS AND SECULAR INSTRUCTORS.

Chaplains and
Secular In-
structors.

I am directed by the Board to communicate to you the following Instructions for your guidance as Chaplain and Secular Instructor on board the ship " ," now about to proceed to

1. As Chaplain, your spiritual care will, of course, be confined to the portion of the Emigrants, without interference with the . As Secular Instructor, your care and attention will be bestowed indiscriminately on both; and you will be considered exclusively responsible for the proper discharge of these functions.

2. Your duties as Secular Instructor will generally be—to take care that the children are formed into classes for instruction and monitors appointed for each as soon as possible, and that school is held daily (weather permitting) during such hours as may be settled by you, with the concurrence of the Surgeon ; that instruction is given not only to the children, but to such of the adult Emigrants as may be willing to receive it, making, however, such arrangements as will not interfere with the children's classes; to keep a register of the attendance of the scholars, noting their conduct and progress, either by marks or in such other form as shall seem to you best calculated to exhibit the results of the instruction given during the voyage ; to endeavour to induce all the Emigrants to employ themselves usefully to themselves and others, giving a profitable direction as far as possible to their occupations and amusements, and especially endeavouring to render the more advanced, whether among the children or adults, available for teaching the rest.

3. A supply of books for the use of the Emigrants, as well as some other articles necessary for the tuition of the children will be put on board, and these (except the religious works), are to be considered as under your charge. Such of the books as are not of an educational character are intended to be lent out to those Emigrants who may desire to read them. A list of the persons to whom the books are lent is to be kept. Means should be taken to ensure that they are duly returned to you in a reasonable time, and that care be taken of what has thus been provided for the amusement and instruction of all.

4. At the conclusion of the voyage the books are to be distributed by you to the most deserving of the Emigrants, and especially to those from whom you have derived assistance in teaching.

5. You will co-operate with the Surgeon in such measures as he thinks necessary for the maintenance of order, cleanliness, and regularity amongst the Emigrants. He, on his part, is instructed to give you every facility in the performance of your duties. If such facilities are not afforded, it will be competent to you, on your arrival in the colony, to make a report to the Governor to that effect. But during the voyage, the Surgeon's decision must be

received as final in all matters relating to the management of the Emigrants.

6. I am to add that the Board would be glad to receive from you at the end of the voyage a report, in the form enclosed, of the educational progress made by the Emigrants who may have taken advantage of the means of instruction provided for them.

FORM OF REPORT REFERRED TO IN INSTRUCTIONS TO CHAPLAIN AND SECULAR INSTRUCTOR.

SUBJOINED is a Classified Report of the progress made by the Scholars attending School on board the Ship _____, and of the Observations which I have to bring under the notice of the Commissioners.

[Here follow the ruled forms.]

1. Was the school regularly attended? If so, state with } what result.
2. EDUCATIONAL BOOKS.—Is the supply sufficient for the } purposes in view? If not, suggest what should either } be added or dispensed with.
3. BOOKS FOR READING AND AMUSEMENT.—Were the Emi- } grants much interested in them? Name the alterations } (if any) which you would suggest should be made in } the list.
4. GENERAL REMARKS AND SUGGESTIONS.—State any which } you may have to offer, especially with reference to the } establishment of a regular system of education on board } in future ships.

APPENDIX No. 22.

INSTRUCTIONS GIVEN TO CERTIFICATED TEACHERS.

I AM directed by the Colonial Land and Emigration Commissioners to communicate to you the following instructions for your guidance as Teacher on board the ship _____ about to proceed to

1. You will as soon as possible form the children into classes for instruction, and appoint monitors for each.
2. You will hold school daily (weather permitting) during such hours as may be settled by you with the concurrence of the Surgeon Superintendent.
3. You will give instruction not only to the children, but to such of the adult Emigrants as may be willing to receive it, making, however, such arrangements as will not interfere with the children's classes.

4. You will endeavour to induce all the Emigrants to employ themselves usefully to themselves and others, giving a profitable direction as far as possible to their occupations and amusements, and especially endeavouring to render the more advanced, whether among the children or adults, available for teaching the rest.

5. You will keep a register of the attendance of the scholars, noting their conduct and progress, either by marks or in such other form as shall seem to you best calculated to exhibit the result of the instruction given during the voyage.

6*. Besides the instruction of the children, you will, if required by the Surgeon and weather permitting, read Divine Service to the Emigrants at least once on every Sunday throughout the voyage.

7. The Commissioners' Officer who will despatch the vessel will make over to your care a supply of books for the use of the Emigrants on board, as well as some other articles necessary for the tuition of the children. Such of these books as are not of an educational character are intended to be lent out to those Emigrants who may desire to read them, and will engage to take care of and return them. A list of the persons to whom the books are lent is to be kept. You will see that they are duly returned to you in a reasonable time, and that care be taken of what has thus been provided for the amusement and instruction of all.

8. At the conclusion of the voyage the books may be distributed to the most deserving of the Emigrants, and especially to those from whom you have derived assistance in teaching.

9.* You will co-operate with the Surgeon Superintendent in such measures as he thinks necessary for the maintenance of order, cleanliness, and regularity amongst the Emigrants. [He, on his part, is instructed to give you every facility in the performance of your duties. If such facilities are not afforded, it will be competent to you, on your arrival in the colony, to make a report to the Governor to that effect.] But during the voyage, the Surgeon's decision must be received as final on all matters relating to the management of the Emigrants. [I am to add that the Board would be glad to receive from you a report (in the enclosed form) at the end of the voyage, with any suggestions you may have to offer for the establishment of a regular system of education on board, in future ships. The duplicate of that report is to be given to the Surgeon Superintendent, who will deliver it to the colonial authorities.]

* This clause (6) and the words in italics in clause 9 are omitted when the Teachers are steerage passengers.

APPENDIX No. 23.

MATRON'S INSTRUCTIONS.

Matron's
Instructions.

The Emigration Commissioners having appointed you Matron on board the ship _____, I am now to convey to you the following instructions for your guidance.

1. All the girls, and also the unmarried females not having natural protectors on board, will be considered as specially under your charge, subject to the directions of the Surgeon Superintendent.

2. You will inspect the children daily to see that they are clean and neat. You will be also careful that their stock of clothing is washed at proper times, to be appointed by the Surgeon Superintendent, and that it is kept in good order.

3. You will assist the Religious Instructor or Teacher, where one has been appointed by the Commissioners, in teaching the girls. But should no Religious Instructor or Teacher have been appointed by the Commissioners, you will establish a Girls' School, to be held daily, weather permitting, at such hours as may be settled by the Surgeon Superintendent. All girls up to 16 years of age who are not too young to derive benefit from it, will be expected to attend the School. You will not, however, confine your teaching to the Children, but give instruction to any of the Adult female Emigrants who may be willing to receive it. You will endeavour, as far as possible, to render the more advanced, whether among the children or the adults, available for teaching the rest.

4. You will also endeavour to give to the young women such general instructions in reference to household duties as may be practicable on board ship.

5. A portion of the elementary Books put on board will be handed over for your use by the Surgeon according to his discretion. And in order that the female Emigrants may always have some employment, a supply of materials for work (of which a list will be given to you) has been provided by the Commissioners, and will be placed in your charge to distribute from time to time as you may think best.

6. You will be careful to keep a regular account, in the Diary, (which will be furnished to you for the purpose) of the materials issued to the Emigrants, as well as of the work done; and you will take care that all the Articles made from these materials are duly returned to you. These Articles are on no account to be given away on board ship, but must be retained by you, and delivered up at the end of the voyage to the Government Immigration Agent with the Diary above referred to.

7. You will see that the single women are in their proper sleeping apartments as soon as it is dark, and that no male person is then on any pretence admitted, except the Surgeon in his professional capacity. In the event of the Surgeon's attendance being required, it will be your duty to be present with him. You will keep the key of the apartment unless you should be required, in writing, by the Surgeon, to deliver it over to his custody.

8. With a view to prevent any irregularity, you are authorized to muster all the unmarried young women at any hour you may deem necessary for this purpose; but you will be responsible for

exercising this authority with discretion. In short, you will endeavour to promote, by every means in your power, good order, regularity, and cleanliness, amongst the girls and young women under your special charge, assisting the Surgeon Superintendent in any measures which he may think necessary for that purpose,—but bearing in mind that his decision must be received as final on all matters relating to the management of the Emigrants, and that the payment of any gratuity which may have been held out to you will depend upon your having discharged your duties as Matron to the satisfaction of the Colonial Authorities.

APPENDIX No. 24.

INSTRUCTIONS TO BAKERS.

Instructions to
Bakers.

1. It is intended to supply the Passengers three times a week, namely, on Tuesdays, Fridays, and Sundays, with soft bread.
2. The allowance of flour for these days you will make into bread, which is to be baked every Monday, Thursday, and Saturday, but not issued to the people until the day after it is baked, so as not to be eaten new.
3. When the flour has been kneaded into Dough, and is ready for baking, you will carefully weigh and divide it into such portions as will give to each Mess the exact quantity of Bread to which it is entitled according to the weight of Flour belonging to that Mess.
4. Each of these portions of Dough, when weighed, is to be carefully marked with the number of the Mess for which it is intended ; this may be done by sticking a tin tally into the Dough with the number of the mess on it, or by any other mode that may be found convenient.
5. On every day of the week during the voyage, except on Monday, Thursday, and Saturday, the Oven is to be heated for baking food, which the Emigrants may themselves have prepared, for any six consecutive hours that may be fixed on by the Surgeon Superintendent.
6. You will be responsible for properly baking the Food so brought to you.
7. One or more of the Constables, in daily rotation, as the Surgeon Superintendent may direct, is to assist you in maintaining order, and in seeing that all is conducted fairly in the Bakehouse.
8. None of the ship's Crew, nor any Emigrant, except the Constable appointed for the purpose, is to be admitted at any time into the Bakehouse without the express sanction of the Surgeon Superintendent.
9. When the Bakehouse and Oven are not in use, they, as well as the utensils therein, are to be thoroughly cleaned and locked up, and the key kept in your possession.
10. You will be recommended for a gratuity of $3l$, provided you discharge your duties to the satisfaction of the Surgeon Superintendent and the Local Authorities.

RECEIPTS FOR MAKING YEAST AND BREAD ON BOARD SHIP.

For Yeast.

1. Take 2 lbs. of malt, and 2 oz. of hops. Boil the hops in 4 gallons of water for 20 minutes. Take it off the fire and let it stand 20 minutes. Put the malt in a clean bucket or tub, and strain the liquor from the hops on to the malt. Stir well together, and let the mixture stand until you can bear your hand in it, then set it to work with one pint of yeast and one bottle of porter. In the course of 12 hours it will be ready for use. Care must be taken that it does not get cold in the process, and that what is not required for immediate use be at once bottled off and tightly corked. It is always necessary to take a little fresh yeast to sea to start the first brewing, and to save sufficient from each brewing to start the succeeding one.

Or try the following ; viz.,—

2. Take 1 gallon of water and 1 oz. of hops. Simmer 20 minutes, and at a temperature of 70 degrees add $1\frac{1}{2}$ oz. of moist sugar and $1\frac{1}{2}$ oz. of flour. To be kept in well corked bottles. It will be fit for use in 24 hours.

For Bread.

Prepare a ferment with a small quantity of potatoes, yeast made as above, and water. When the ferment is ready, add the same quantity of water as you have in the ferment, then set your sponge; when that is ready, add the same quantity of water as you have in the ferment and sponge, make your dough, let it prove, and bake.

APPENDIX No. 25.

INSTRUCTIONS TO MASTERS.

Masters'
Instructions.

1. I am directed by the Emigration Commissioners to transmit to you the following instructions for your guidance as master of the government passenger ship

2. You will proceed at once to without touching at any port or place, except from urgent necessity.

3. On arriving at you will deliver your passengers to the care of such officer as may be appointed by the local government to receive them.

4. It will then be incumbent upon you, in order to enable your owners to obtain payment of what may be due in respect of the passage money for the emigrants, to procure and transmit to England the two following documents, duly signed and countersigned, as required by the charter party, viz.—The certificate of arrival, containing a nominal list of the emigrants landed alive in the Colony, and the surgeon's certificate of the passengers who were born, or who died, or who left the Ship during the voyage.

5. Blank forms of these certificates and a copy of the charter party are herewith inclosed, for your information and use.

6. Before sailing you should see that every article required to be

provided for use in case of accident at sea is complete and readily available for immediate use if required.

7. I also enclose for your information and guidance a notice issued by the Board of Trade, respecting Lights and fog-signals. Also a memorandum issued by this Board containing suggestions to the masters of emigrant ships respecting boats and accidents by fire at sea. Cliford's boat lowering apparatus should be tested before the ship sails, and ought to be slackened down once a week to prevent the sheaves from becoming stiff.

8. Your particular attention is requested to that article of the charter party, whereby you are enjoined not only to abstain yourself from all improper or unnecessary communication with the female passengers, but strictly to prohibit and prevent, on the part of the crew and officers, any communication whatever with them. The sale of any article whatever to the Passengers, except tobacco, is also strictly prohibited. You alone may sell tobacco, but only on the written sanction of the surgeon, and in quantities not exceeding in the whole 2lbs. for each adult male passenger during the voyage, at the price which may have been fixed by the commissioners' officer before the vessel sailed.

9. You will yourself bear in mind and will impress upon your officers and crew the importance of attending to these requirements as well as to the Regulations issued by the commissioners for observance on board of government passenger ships, the breach of which, or any ill treatment of the passengers, will not only entail upon the offender the forfeiture of the gratuity which might otherwise be granted, but may subject the owners to the forfeiture of the passage money.

10. You are to take care that the passengers receive, at proper times, the full dietary provided for them by the charter party, and especially that their daily allowance of water is not withheld from them. The biscuit packed in cases should not be issued until that packed in bags, and intended for use at the commencement of the voyage, has been expended. The supply of mess utensils, small stores, &c., supplied by the owners for the emigrants, is to be carefully reserved for issue, according to the requirements of the surgeon superintendent.

11. You will see that all the lamps put on board for the use of the passengers are lighted at dusk, daily, and kept burning in the 'tween decks until bed-time; and that proper lights, according to the regulations, are kept burning all night for the convenience of the passengers, at the hatchways, in the water-closets for use at night, and in the hospital, whenever it may be occupied.

12. You will take care that the water-distilling apparatus, if there be one on board, is kept constantly at work throughout every day during the voyage, and you will, as far as practicable, make all issues to the passengers from the water so distilled. Unless there is good reason to the contrary, an additional supply of fresh water should be issued to the passengers beyond the regulated allowance whilst the vessel is within the tropics. You will also take care that the cooks, bakers, passenger stewards, and other persons embarked for the comfort of the passengers, attend in all things to the orders of the surgeon superintendent.

13. The medical comforts are put on board for the exclusive use of the emigrants, and are to be issued entirely at the discretion of the surgeon superintendent. The preserved milk for the young children is also to be used freely at his discretion. The malt liquor, wine, and spirits are to be issued only upon a written requisition of the surgeon addressed to you, specifying the patient or patients for whom the issue is required, and the quantity in each case. And in no case are you to issue more of these articles than is required for a single day's consumption.

14. The directions of the surgeon superintendent as to the ventilation of the 'tween decks are to be carefully attended to in every respect by yourself as well as by your officers and crew.

15. _____ have been appointed surgeon superintendent, and, as such, is empowered to exercise general control and superintendence over the passengers. In all matters, therefore, relating to them, you will pay due regard to his authority, co-operating with him in enforcing the established regulations for the maintenance of order among the people, and affording him such countenance as may add to his moral authority on board.

16. In order to encourage attention to the welfare and comfort of the passengers, a sum not exceeding 4s. a head on all the Emigrants landed alive in the Colony will be distributed; by way of gratuity, between you and the officers of the ship, in such proportion as the Governor may think fit, provided he is satisfied that you have severally done your duty, and have, by your attention and humane conduct, promoted as far as lay in your power the welfare and comfort of the Emigrants.

17. The commissioners have intimated to the owners of the vessel that it is to be understood that the pay of yourself and of the other officers of the ship is not to be reduced on account of any gratuities which the colonial government may think proper to assign you. You will be good enough to communicate this to your officers.

18. Attached to this letter are two copies of the instructions for the guidance of the baker for the passengers on board your ship, and I am to request that you will afford the surgeon superintendent your best assistance in carrying out efficiently the arrangement for baking bread for the passengers. You will hand one copy to the baker and retain the other.

19. The money and effects of any of the passengers unaccompanied by relatives who may die during the voyage are to be collected in your presence by the surgeon superintendent and handed over to your custody, with an inventory, a copy of which you are required to sign and return to the surgeon superintendent. On arrival in the Colony you will deliver this inventory with the property of the deceased to the immigration agent or other Government officer appointed to receive the effects of deceased immigrants.

APPENDIX No. 26.

SUGGESTIONS TO MASTERS OF EMIGRANT SHIPS RESPECTING BOATS,
AND FIRE AT SEA.

Her Majesty's Emigration Commissioners having in view the fearful consequences which must result from a want of preparation in the event of accident to an emigrant ship, and especially of fire, have felt it their duty to call the special attention of the masters and officers of such ships to the precautions necessary to prevent such a calamity and to means of encountering it, should it occur. They are, of course, aware that no scheme or regulations which may be formed beforehand can supply the place of coolness, judgment, and discipline at the time; nevertheless, the previous establishment of regulations, and the familiarity of the officers and crew with them, cannot but tend to obviate confusion and loss of time when danger arises. It is from the hope of contributing to this end, and not from any disposition to interfere in matters beyond their immediate duties, that the Commissioners have drawn up the following suggestions.

Suggestions to Masters respecting Boats and Fire at Sea.

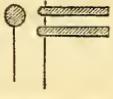
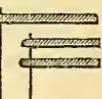
The first matter to be settled is the arrangement of the boats.

I.—BOATS.

1. The life-boats should be carried at the quarters. Every boat Life boats. should be provided with painter, oars, boat-hooks, pins, plug, rudder, and tiller, all of which are to be properly secured in the boats. All the life-boats should be fitted with life-lines. The long-boat should have a fitted mast to sail of whatever rig may be preferred.
2. A compass, a means of striking a light, three blue lights and a C om pass, &c. breaker of water should be kept ready for emergencies.
3. All the boats should be kept in good order, clear, and ready for immediate use.
4. A crew should be assigned to each boat, to be under the charge Boat's Crew. of an officer or steady person, who should be held responsible for everything being kept at hand and ready for use. The crew of the life-boats should be picked men. When opportunities occur, it would be very advisable to exercise the men in lowering the boats at sea.
5. In the event of lowering a boat to pick up a man, it will generally happen that the man will be more easily seen from the ship than from the boat. In such a case the following signals from page 311 of the Commercial Code may be useful.

SIGNALS TO BOATS.

Recall.	Pull ahead. Go on.	Pull, or go, Astern.	Pull, or go, to starboard.	Pull, or go, to Port.
				

SIGNALS FROM BOATS.			
Want assistance, or Unable, to execute orders without assistance.	Shall I return? or, Direct me what to do.	You are standing into danger.	Want immediate assistance.
			

These signals from boats to ships to be made with a handkerchief and hat or bundle tied to the end of a boat hook, staff, oar, or stretcher. Any other means likely to attract attention may at the same time be adopted, being careful to use such as will not interfere with or confuse these signals.

If the boat's signals were stamped on canvas and nailed to the boats, they would be found very useful in the event of picking up a man at sea.

Lights.

- Should a boat be sent away at night, two lights (a single light may be mistaken for a star) should immediately be hoisted by the ship to show her position, with guns, blue lights, or flashes, as necessary.

II.—To PREVENT FIRE.

Cargo to be properly stowed before sailing.

Passengers to give up inflammable articles.

Naked Lights and smoking to be prohibited.

Spirits not to be broached in the hold.

Fire Engine.

- No passenger ship should put to sea until all her cargo is properly stowed away, and the decks cleared of any loose straw or hay, or other inflammable material used for packing or other purposes.

- The passengers should be called on to deliver up whatever lucifer matches, gunpowder, or other inflammable articles they may have about them, and should be warned, not only of the danger to the ship and passengers, but that they will be subject to punishment, under Her Majesty's Orders in Council for retaining such things in their possession.

- No naked lights should, on any account, be used in the hold or store rooms, nor in the between decks, except under trustworthy superintendence; nor should any person be allowed to read in bed with a naked light. Smoking between decks should also be strictly prohibited.

- Spirits should never be opened in the hold but should be hoisted on deck for the purpose.

- It is recommended that the fire engines should be placed under the special charge of one of the principal officers and the carpenter, who should be responsible that, with the buckets, they are kept in a state fit for immediate use. The engine should be worked once or twice a week, to keep it in proper order.

12. As soon as possible after leaving port, the officers and crew should be divided into parties, and assigned to stations, in case of fire, in the same manner as for the boats; possibly the same distribution may answer for both purposes.

Ship's Company to be divided into Gangs and assigned Stations.

III.—ON THE OCCURRENCE OF FIRE.

13. Should a fire break out, the first steps, with a view to arrest its progress as much as possible, must be so to place the ship as to keep the fire to leeward, and to cut off the supply of air by closing the ports, scutles, hatches, &c., and by smothering the fire with wet blankets, sails, &c.

Primary points for Master to attend to on an alarm of Fire.

14. The parties into which the ship's company has been divided should, immediately on the ringing of the fire bell, fall into their respective places. To one party should be assigned the working of the engines; to another the closing the ports, &c. and the preparation of wet cloths for suffocating the fire; to a third the preparations for lowering the boats and provisioning them. Each of these duties will require prompt and clear decision, and each should, therefore, be entrusted to an intelligent and responsible person; and as it might be a great assistance to an officer when the emergency arises, to have had the opportunity of considering before-hand the best way of meeting it, it would be desirable that each should from the first be informed of the duty which, in such a case, would be assigned to him.

Duties of Gangs.

15. The male passengers should be required to fall into and assist the several parties as the master might direct. This would not only be a material aid, but would help to keep their minds engaged, and to promote the discipline on which the safety of all must to a great extent depend.

Male Passengers.

16. The females, with children and sick, should remain under the immediate charge of the surgeon, who should endeavour to keep them from being a hindrance to the working parties, and prepare them for immediately leaving the ship, should that step ultimately become necessary. They should secure what warm clothing they could.

Females and Children.

17. No one should be permitted to enter the boats, except those in charge of them; nor should any boat be lowered on any pretext whatever, unless by the express orders of the captain. On a strict observance of this rule the safety of the people in the last extremity will depend.

No one to enter or lower the Boats without Orders.

18. If the boats should be insufficient to hold all the people, the master will, of course, take whatever measures may be in his power to construct a raft. A raft may be made of spare spars lashed together in a triangular form, and, to render it more buoyant, the ends should be secured to empty water casks, whose heads should be guarded by hammocks or beds. As a precautionary preparation against such an emergency, some of the largest water casks as soon as emptied should be grommetted round at each end with 8-inch rope, becketted, and tightly bunged, and stowed away in the long boat, and daily wetted, and thus kept ready for use at a moment's notice.

Broaching
Spirits in mo-
ments of
Danger to be
forcibly re-
sisted.

19. Any attempt to get at the spirits or wine on board in moments of danger should be resisted by all hands, and at all hazards.

By order of the Board,
S. WALCOTT.

Government Emigration Board,
Park Street, Westminster, May, 1864.

APPENDIX No. 27.

INSTRUCTIONS TO SURGEONS-SUPERINTENDENT OF GOVERNMENT EMIGRANT SHIPS PROCEEDING FROM INDIA TO BRITISH GUIANA.

Instructions to
Surgeons of
Coolie Ships.

British Guiana Emigration Agency,*
Calcutta, 186 .

To

Surgeon-Superintendent,

Ship .

SIR,

HAVING appointed you to the situation of Surgeon-Superintendent of the Ship proceeding hence to Demerary, the subjoined Instructions have been prepared for your guidance.

Your Remuneration will consist of a free Cabin passage, with diet at the Captain's table, and a pint of good wine daily, from this to the port of debarkation, and finally you will be furnished with a free passage to England, should you require it, at the expense of the Ship.

On debarkation of the Emigrants, and production of the documents specified in afore-mentioned Instructions, you will be entitled to receive at the rate of shillings sterling per each coolie landed, provided that the Colonial Authorities are satisfied with your conduct and treatment of the Emigrants during the Voyage. You will distinctly understand that, if the vessel puts in at the Cape of Good Hope or St. Helena, or any other British Port, and the Governor of the Colony should find it necessary to dispense with your services, in consequence of any misconduct on your part during the voyage, he will have full power to displace you, and you will have no claim for any remuneration or compensation whatever, nor will you be entitled to remain in the ship.

You will also bear in mind that, if the Government of British Guiana should deem you to have been guilty of any misconduct, or discover any inefficiency on your part during the voyage, you will have no claim whatever for any remuneration or compensation on the Colonial Authorities, the Emigration Commissioners, or the Emigration Agent here.

I have, &c.

* N.B.—The instructions issued by the Trinidad and other West India Agencies are substantially the same.

Instructions to Surgeons-Superintendent of Emigrant Ships proceeding from India to British Guiana.

1. You will visit the Dépôt daily until the period of embarkation, and at such a time as will be notified to you, for the purpose of examining each intending Emigrant, when it will be your duty, in conjunction with the Dépôt Surgeon, to point out to the Agent any person who may not be in good health, or who may be unfit for the voyage, or incapacitated in any way for service as an able-bodied agricultural labourer. You cannot bestow too much care on this examination, as it will be useless in case of any mortality or sickness occurring during the voyage, to assign as the cause of it that the people were shipped in a sickly or unfit state, for no person will be shipped without your approval. You will also at the close of the examination be called upon to sign a certificate in the accompanying form:—

“ I hereby certify that in conjunction with , the Dépôt
 “ Surgeon, I have this day examined and passed Men,
 “ Women, Boys, Girls, and Infants, Emigrant
 “ Passengers for the Ship . They all seem to be in
 “ perfect health and fit condition for the voyage and efficient as
 “ agricultural labourers. That the ages of the Emigrants, as written
 “ on their respective certificates, are, as far as we can judge, cor-
 “ rectly stated.”

You will also visit the Ship at a convenient early period for the purpose of ascertaining and reporting on the deck and hold ventilation. You will also report on the suitableness of the Hospital.

It is also requisite that you, in conjunction with the Protector of Emigrants, carefully survey the stores for the voyage, and inform the Agent in writing of any irregularity in quantity or quality. A copy of the Charter Party will be furnished to you.

You will also be pleased to state in writing, before your departure, any objection you may have to the conduct of any individual, or proceedings connected with your charge, otherwise no attention can be paid to it.

2: You will be present at the Embarkation, and make any suggestions which you may think beneficial for the safe and convenient performance of that service. Immediately on the arrival of the Emigrants on board, you will arrange and berth them as quickly as possible, placing the women and married people in the after-part of the vessel. You will strictly prohibit the emigrants from drinking the river water from alongside, and use every available authority and means to prevent it. You must understand that you are not only charged with the medical care of the Emigrants, but that on you devolves also the maintenance of discipline among them, and consequently the enforcement of regulations for securing cleanliness, regularity, and good conduct. As your means of coercion are limited, you will have to trust very much for the attainment of these objects, to the moral influence which you may acquire over the Emigrants, by a firm and decided, but kind and conciliatory exercise of your functions, by a considerate attention to the feelings of the people,

Attendance at
Dépôt prior to
embarkation.

and an impartial and just bearing in any questions which may arise among them ;—and by showing an interest in their well-being and comfort, there can be little doubt that, over persons so circumstanced an officer in your position of Surgeon-Superintendent may acquire a very great influence. But it is equally evident, that any want of temper, or justice, or attention on your part, would alienate the Emigrants from you, and make the performance of your duties proportionately more difficult.

Nor is it only towards the emigrants that you, as Surgeon-Superintendent, should well consider the relation in which you stand. As their protector, it will be your duty to watch over the conduct of the master and officers of the ship in all that relates to the emigrants ; to see that the proper allowance of food and water is duly issued to them ; to protect them from ill-usage ; and especially to prevent communication with the single females. Your relation with the officers of the ship will require the exercise of as much discretion and firmness as your relation with the emigrants ; and on your exercise of those qualities will depend not less your own comfort than the success of the voyage. You must remember that for any maltreatment of the emigrants or other breach of the stipulations of the Charter Party intended for their benefit, you will be held responsible by the Colonial Authorities, in whom also is vested the power to withhold all gratuities, should they be dissatisfied with your conduct and that of the officers of the ship.

Sirdars.

3. Two sirdars are appointed for each hundred men. Their duty is to assist you in maintaining discipline among the emigrants, receive and attend to the execution of your orders, receive and distribute the rations, and superintend the cooking, &c. For this service they will receive a gratuity of (5) five rupees each on arrival in Demerary, which sum will be paid them on disembarkation by the Emigration Agent General at Demerary. As much depends on these men for the efficient carrying out of your arrangements for discipline and cleanliness, great care has been taken in their selection ; yet too much trust must not be reposed in them, especially in the distribution of the rations.

Topazes.

4. There will be one topaz or sweeper per each 100 people placed on board. Their duties will be, with the aid of the Coolies, to sweep up the decks, and keep them always clean, remove immediately any dirt which may be made, to attend especially to the water closets, to keep them clean by disinfectants and water, and allow no accumulation of filth. One of these men may be made available as your hospital assistant or nurse ; indeed they are made to understand that they are to make themselves generally useful. A free passage is found them by the ship with seamen's rations ; but the wages for six months, at 15 rupees per month, are paid by the agent at the port of embarkation. Three months are given to them in advance, the balance will be paid them at termination of voyage, if their duty has been satisfactorily performed.

Rations.

5. At 8 a.m. you will attend with the sirdars and receive from the third mate (whose especial duty this is) the rations for the day. The daily rations must be divided for two meals, one moiety to be cooked and issued to the people about 9 or 10 a.m., the other at 2 or 3 p.m.

The cooks (whom the sirdars will select for you, and who should be promised some little remuneration or indulgence) will receive them from the sirdars, and when cooked, again hand them to the sirdars for distribution. For the first day or two, especially in the river, the full ration is generally considered somewhat too much, and you will use your discretion in issuing it until you are at sea. One boiler should always be half filled at daylight with materials for a light soup, say about 30 lbs. rice, 2 lbs. sojee, and a 6 lb. tin of preserved meat, and a little seasoning. This should be ready to be issued about 8 o'clock a.m. to the sick, weakly women, and children, about a tea cup full to each. Although a scale of provisions is laid down for daily issue, it is in your power, if you see fit for sanitary purposes, to alter it, always noting the same in your journal, with the object in doing so. It is important that you should see that the food is properly dressed. You will note carefully if any particular article of diet disagrees with the emigrants, in order to its being corrected.

6. It is hardly necessary to dwell on the vital importance of Cleanliness, encouraging and even enforcing cleanliness amongst emigrants in their persons, clothing, sleeping places, and decks. You will, therefore, with this object, visit their deck at least three times daily, see that it is kept swept and dry, holy-stoned every morning; all beddings, blankets, and clothing folded up and taken on deck for airing, whenever the weather will permit. You will see that no uncooked grain, rice, dhol, or any other improper food is concealed in the bundles, &c. The emigrants are apt to accumulate such things and secrete them, with the object of disposing of them at the end of the voyage; but such practices must be strictly prohibited, and the sirdars especially watched in this respect. Bathing, when health permits, should be strongly recommended to all, and for this purpose a screened place should be allotted for the women. No wet clothes should be taken below. The passengers should be forbidden to wet their deck for any purpose. It is of very essential importance that the deck be always kept perfectly dry.

It would be advisable to establish at least a bi-weekly muster when all should be enjoined to appear washed and as cleanly as possible.

7. Windsails at each hatchway to be kept constantly hoisted and Ventilation. trimmed while the coolies are on board, and all the other appliances for giving a free circulation to the air are to be made use of. You will be very careful in observing that the hold ventilators are kept free and unobstructed. The emigrant deck will be at all times kept perfectly dry, and the coolies kept on deck during the day as much as possible. The clothes and bedding must be taken on deck frequently for airing, but on no account to be allowed to get wet. The deck should be occasionally sprinkled with disinfecting fluid, or the solution of chloride of lime, and the dry chloride suspended between the decks; white-washing between the decks, occasionally, is requisite.

8. The emigrants should have every encouragement to take the Air and exercise. air on deck. You should promote music, dancing, and every harmless means of combining exercise and amusement. In the hot

latitudes the people should have the benefit of awnings, and as much as possible be sheltered from the sun in all parts of the deck.

Discipline.

9. Throughout the treatment of the people, it will be your aim to maintain good moral conduct, cheerfulness, and regular habits, establishing fixed days and certain hours for as many purposes as you can, and endeavouring to bring the whole of your system into a settled routine, capable of uniting itself with the daily life of the emigrants as a matter of course.

**Serving out
and cooking
provisions.**

10. You are to take care that the emigrants have their allowance of provisions and water without any deduction whatever (unless as specially ordered by you under any of the clauses of these instructions), in the same quantities and at the same time as are stated in the dietary scale ; that convenient times are appointed for serving out to them their daily rations not later than 8 a.m., so that they may be cooked and ready for issue at 2 p.m. It is desirable that the meals be taken on deck ; that their victuals are properly cooked and in the manner to turn them to the best account for themselves without any artifice to increase the cook's perquisites ; and especially that the meals are served with punctuality, in which respect any habitual failure is to be reported to the Colonial authorities on arrival, with reference to its bearing on the Master's claim for gratuity.

**Diet of the
sick.**

11. The sick will be victualled according to your discretion, and you are at liberty to cause to be issued to them, in addition to the medical comforts required for their use, the whole or any part of their regular rations, or any other articles furnished by the scale of victualling, as you may deem best.

**Visiting the
sick.**

12. You are to visit the sick frequently, at least three times a day, and oftener if necessary ; paying every attention to their nursing, medical treatment, and general comfort, and assigning to them the most suitable diet, as provided for in Article 11.

**Their medi-
cines and
drink.**

13. You are to take particular care, that the medicines and proper drink be provided for the sick every evening, in sufficient quantities to serve until morning.

**Use of the
Hospital.**

14. The hospital being intended chiefly for patients labouring under infectious complaints, or such as render confinement to bed necessary, you are not to admit into it persons affected with slight complaints, but are to attend to them in their berths.

**Property of
deceased emi-
grants.**

15. You are to take charge of the effects of emigrants who may die on board in the absence of any near relative, such as husband or wife, parent, brother, or sister ; and will make out an inventory in presence of, and countersigned by, the captain, and hand it with the goods to the Emigration Agent at port of debarkation.

**Consular as-
sistance in
Foreign Ports.**

16. Should the vessel be forced from any cause to put into a foreign port, you will at once report yourself to the British Consul, from whom you will obtain any assistance or advice you may require.

**Reporting
progress of
Ship.**

17. You are expected, without fail, to take advantage of every favourable opportunity of reporting the progress of the ship, and the state of the people on board, and to furnish a return of any deaths which may have occurred, with the dates, the names, and ages of the parties, and the cause of death.

18. You will do your best to obtain the cordial co-operation of Co-operation
the master and officers, in order that, by your united exertions, the of Master and
service may be performed in the most efficient manner possible.
The Instructions to the Master will be appended to these. Should
any difference unfortunately occur on any point between you and
the captain, you will communicate in writing any request you may
have to make in the matter, and will enter in your journal a copy of
your letter, and of the captain's answer.

19. In reference to all the preceding duties on the voyage, you General Jour-
are to keep a daily journal of your proceedings, noting every occur- nal of Voyage.
rence of moment. You are to enter the dates when the decks are
scraped and holly-stoned, &c., the ship fumigated, the blankets and
bedding shaken and aired, and spare clothing and mess utensils
issued, with the number issued of each, and the reason of their
issne. You are also to notice the Sunday and other musters, and
are to state every day the nature of the weather. The crossing of
the tropics and of the line should be noticed. You will enter in
your journal any remarkable instances of the good or bad conduct of
the people, or of the working of the regulations for their discipline.
At the end of the journal you will place together all your general
observations on the voyage, expressing every objection you may see
reason to form to the regulations or to the victualling or any other
part of the arrangements, and taking care to name the remedy you
would propose. A return is to be made on the concluding page of
the journal, in the form contained in the Appendix No. 1, of the
principal duties of the voyage, and of the number of emigrants
embarked and disembarked. You will attend carefully to the Water distilling
working of the water distilling apparatus, and specially report apparatus.
direct, as to its operation, to

S. WALCOTT, Esq.,
Emigration Commissioner, &c., &c.
Park Street, London.

20. As some guide to surgeons who have not previously been to Journal.
sea in charge of emigrants an outline of a journal for a portion
of the voyage is annexed in Appendix, by way of specimen—
Form VI.

21. Independently of the preceding general diary, you should Medical
keep a distinct medical journal, showing on what day each patient is Journal.
entered for treatment and on what day discharged, and whether
cured, transferred to other hands, or dead; stating also the nature
of the disease and the method of treatment; and if there be any
causes connected with the voyage which appear likely to have
occasioned the disease, you are to assign them, and point out
whether there seems to you any practicable method of obviating
them for the future, more especially if the complaint be of an
infectious nature (Form No. II.); and you will make a weekly
abstract of the same, showing the names and numbers of the sick,
and their disorder during the week, according to the Form No. III.,
contained in the Appendix.

22. Immediately on reaching your destination you will report Report arrival
your arrival to the Colonial Secretary, but during the time the in the Colony

to Colonial
Secretary.

Journal, &c. to
be made over
to the Immi-
gration Agent
General.

'Tween decks
temperature
should be
noted.

Females not to
be employed as
servants.

Number of
cooks.

emigrants are entitled to remain on board the vessel under the Charter Party or Contract, you are to remain with them, and continue in the discharge of your duties.

23. On your arrival at Demerary the whole of the afore-mentioned journals, &c., are to be handed to the Immigration Agent General.

24. It is desirable that the Surgeon-Superintendent take the temperature 'tween decks two or three times a day, say before the people go on deck in the morning, at noon, and at 8 p.m. The ascertained rates should be noted in his journal, and the places where taken.

25. No female emigrant on any account to be employed as a servant or attendant to the captain, surgeon, cabin passengers, or officers of the ship.

26. Eight or ten cooks will be told off, who will receive a gratuity at the end of the voyage, if meriting your certificate of approval.

SUPPLEMENTARY INSTRUCTIONS to SURGEONS SUPERINTENDENT of Emigrant Ships proceeding from CALCUTTA to the WEST INDIES sanctioned by HER MAJESTY'S SECRETARY of STATE for the COLONIES, and forwarded by HER MAJESTY'S EMIGRATION COMMISSIONERS, under date 10th October 1864.

Immediately on your appointment by the Emigration Agent, which will be, if practicably possible, at the least ten days before the sailing of the ship to which you may be appointed, you will obtain his sanction to the appointment of a Compounder and Interpreter, who understands and speaks the languages spoken by the Natives of India about to embark under your charge, to act as an Assistant to you on board the ship. If you should happen to be appointed for a period not exceeding a week previous to the sailing of the ship, you will, accompanied by the Compounder and Interpreter, daily visit the inmates in the Dépôt, about to be shipped as Emigrants on board the ships, and you will carefully inspect and examine them, individually, as to their age, state of health, and physical strength, and for this special service you will be entitled to receive the sum of one pound five shillings sterling a day, in order to pay the additional expense of carriage hire to which you will be subject; and the Compounder and Interpreter will be entitled to receive the sum of five shillings a day, for accompanying and for acting as your Interpreter and being of any other service to you in his power. But, if you should be appointed for a period exceeding a week previous to the sailing of the ship, you will, accompanied by the Compounder and Interpreter, make such visits to the number of five or six at the least, so as, with the assistance of the Compounder and Interpreter, carefully and deliberately to make such examination and inspection as aforesaid ; and, if from any observations of your own, or information you may receive, you should consider it advisable, the Emigration Agent, on your application in writing, will endeavour to obtain the services of a Matron or female Nurse from

one of the public Hospitals in Calcutta, privately and minutely to examine the state of health of the female inmates of the dépôt, about to be shipped as Emigrants on board the ship, so as to avoid, as much as possible, the taking on board ship that disease found so prevalent and wide-spreading among Indian Emigrants.—Previous to the embarkation of the inmates in the Dépôt about to be shipped as Emigrants, you will, in conjunction with another medical functionary, the Examining and Dépôt Surgeon, and in the presence of the Emigration Agent, carefully inspect and examine each Emigrant, and you will understand that the Colonial Government of the Colony of British Guiana will consider you and the Emigration Agent responsible for the embarkation of none other than able-bodied healthy Emigrants. You will satisfy yourself that none of those persons about to be shipped as Emigrants appear, by reason of any mental or bodily disease, unfit to proceed or likely to endanger the health or safety of any other persons about to proceed in such ship. If, therefore, during the voyage you have to encounter severe sickness and consequent mortality, you will be unable to state the Emigrants were shipped in an unhealthy state or condition, or affected by disease, since you are expressly expected to reject all such Emigrants, and you are paid the expenses of your visits to the Dépôt, give you in order to greater opportunities of forming a correct judgment of the state of health of each, than you would have by the single inspection and examination in conjunction with the Examining and Dépôt Surgeon, and by this means insure you the probability of a successful Voyage. If, therefore, at the termination of your voyage, on inspection and examination of the Emigrants by the Health Officer of the port of George Town in the said Colony, and the Emigration Agent General, it should appear that any Emigrant has been embarked afflicted with any permanent disease, deformity, or physical incapacity for bodily labour you will not be paid the gratuity to which you would be otherwise entitled. You cannot, therefore, be too deliberate and minute in your inspections and examinations of the inmates in the Dépôt about to be shipped as Emigrants while in the Dépôt, and to be so is much more necessary during the examination in conjunction with the other Medical Practitioner the Examining and Dépôt Surgeon. You will also, at the close of the last mentioned examination, be required to sign a Certificate in duplicate, in the words and figures following, that is to say : "I do hereby certify that I have this day (or, if otherwise, "yesterday and today, as it may be) carefully inspected and examined individually _____ Men _____ Women _____ Boys _____ Girls _____ Infants about to become Emigrant Passengers on board the ship _____ Tons, from Calcutta to British Guiana, and I do hereby further certify, that none of such persons so about to become such Emigrants as aforesaid, by reason of any mental or bodily disease, are unfit to proceed, or likely to endanger the health or safety of any other persons about to proceed in such ship. And that none of such persons are afflicted with any permanent disease, deformity or physical incapacity for bodily labour, as agricultural labourers, and that the ages of such persons so about to become such Emigrants, as aforesaid as written in their respective Certifi-

"cates, are apparently correctly written and set forth. Dated
 " _____ the _____ day of _____ 186 .

(Signed) A. B.
Surgeon Superintendent.

You will also visit the ship at some convenient period, and inspect the state of Ventilation of the Hold of the ship and of the ship generally, the state also of the Hospital, and the arrangements for the personal cleanliness of the Emigrants, and of the firmness of the construction and convenience of the Privies or Water Closets, and in particular that two Privies or Water Closets are placed aft under the Poop or elsewhere on the upper Deck for the exclusive and sole use of the Women and Children; and you will report to the Emigration Agent as to your being fully satisfied or otherwise with such Ventilation, Hospital, arrangements for cleanliness, and construction of Privies or Water Closets, and if not satisfied, to point out such other arrangements in respect to any or either of such matters as you may consider necessary and advisable.

You will also, in conjunction with the Protector of Emigrants, carefully survey the provisions and stores for the voyage and the Water on board, and the state and condition of the Distilling Apparatus, and whether any fair trial has been made of its state and condition ; and in case of any deficiency in quantity or any impurity in quality, either of the Provisions, Stores, or Water, or any imperfection in the said apparatus, as far as you can judge and ascertain, any such imperfections, you will report such deficiency, inferiority or imperfection to the Emigration Agent. A copy of the Charter party will be given you, in order to enable you to observe the provisions in respect to these and other important matters, and the liabilities of the Owners of the ship.

You will also, before your departure, state in writing your disapproval of any one whomsoever connected with the ship, or the arrangements in any way in respect to or affecting the Emigrants on Embarkation or otherwise, and the reasons for your disapproval. The Emigration Agent will at once attend to every such communication, and if you have left Calcutta before you can be informed of the result of your communication, you will be informed of such result at the Port of your Destination.

You will also have given to you by the Emigration Agent Copies of the Ordinance No. 4, 1864, namely, the Consolidated Immigration Ordinance 1864 as to part 4, Sections 33, 34, and 40, by reason of which you will be instructed in the duties you have to perform, on your arrival in the said Port of George Town, in the said Colony, your destination.

N.B. The Appendix contains the following :

1. List of Medicines.
2. List of Instruments.
3. Forms of Return (Nos. 1, 2, 3, and 5).
4. Specimen of General Journal (No. 4).
5. The following Form of Report of Arrival (*see next page.*)

FORM OF SURGEON'S REPORT ON THE ARRIVAL IN THE WEST INDIES OF THE COOLIE SHIPS.

Place

Date 186 .

SIR, SUBJOINED is a Classified Summary of the Principal Events which occurred on board the Ship _____, and of the Capt. _____ bound from _____ to _____, and of the observations which I have to bring under the notice of the Commissioners.

Place of Departure.	Date of Sailing.	Date of Arrival.	Tonnage.	No. of statute adults the ship can carry.	No. of statute adults embarked.	Port at which the Vessel touched.	
Emigrants.	Men.	Women.		Children between 1 and 10 years of age.		Infants.	Total Souls.
				M.	F.	M.	F.
Embarked	-	-					
Born on the Voyage	-	-					
Died on the Voyage	-	-					
Landed	-	-	-				
Sent to Hospital after arrival	-	-					
Causes of Death	-	-					

Surgeon's Report—*continued.*

1. REMARKS ON THE SHIP AND ITS ACCOMMODATION -
2. OFFICERS OF THE SHIP, INTERPRETERS, SIRDARS, AND TOPAZES.—Their conduct and general behaviour towards the Emigrants }
3. PROVISIONS AND WATER.—Whether ample and good -
4. MEDICAL COMFORTS.—Whether ample and good. If not, particularize the deficiencies }
5. MEDICINES.—Whether ample and good. If not, particularize the deficiencies }
6. CLASS OF COOLIES.—(a.) Were they from the Hills, or Natives of the Low Districts? (b.) What number of "Junglies," or "Santals," amongst them? (c.) Amongst what class did sickness or mortality chiefly occur? }
7. STATE OF HEALTH, &c., OF THE PEOPLE.—(d.) What was the condition, and state of health of the people on embarkation? How long were they in the Depôt before embarkation? (e.) At what period of the voyage did sickness prevail, and what was the principal disease? Did it prevail more in one part of the Vessel than another? And what, in your opinion, was the cause of it? (f.) State the condition, and general state of health of Emigrants on arrival }
8. CLOTHING.—(g.) Were the Coolies supplied with sufficient warm clothing of a proper kind? (h.) Was there a water distilling apparatus on board, and by whom made? How much water did it produce daily, and at what consumption of fuel? (i.) Was the water produced of good and wholesome quality, and sufficient for daily use throughout the voyage? }
9. GENERAL OBSERVATIONS AND SUGGESTIONS -

(Signature of Surgeon).

*Surgeon Superintendent
of the Ship.*

State No. of Voyages } — with Government Emigrants to Australia and Cape.
you have made. } — with Coolies to _____

N.B.—This report is to be sent to the Emigration Commissioners in England by the first opportunity after the Surgeon arrives in the Colony. A duplicate is to be lodged with the Immigration Agent.

*The Emigration Commissioners,
8, Park Street, Westminster, London, S.W.*

APPENDIX No. 28.

FORM OF CERTIFICATE TO BE FORWARDED BY THE SURGEON
TO THE COMMISSIONERS AFTER THE EMIGRANTS HAVE
BEEN EMBARKED.

Form of
Return of
Numbers
Embarked.

NUMBER OF EMIGRANTS EMBARKED.			
	Males.	Females.	Total.
ADULTS:—			
Married - - - -			
Single - - - -			
Totals - - - -			
CHILDREN:—			
Between 1 and 12 -			
Under 1 year - - - -			
Total No. of Souls - - - -			
Equal to		Statute Adults.	

I certify the above-mentioned to be the number of Emigrants delivered into my charge on board the _____, bound to _____, Health of People. and that there is not apparent among them any sickness of consequence, or any infectious disorder capable of proving dangerous to the Passengers.

I also certify, that I have carefully examined the Medicine Chest, and that its contents are complete according to the List specified in the Charter Party of the Ship, and that, to the best of my belief, the drugs are good in quality.

*Surgeon Superintendent of
the Ship*

[*Port.*]
[*Date.*]

To S. WALCOTT, Esq.,
8, Park Street, Westminster.

Examination of
Medicine Chest.

APPENDIX No. 29.

CLEARING CERTIFICATE FROM THE GOVERNMENT
EMIGRATION OFFICER.Clearing Cer-
tificate.

Name of Ship.	Registered Tonnage.	Aggregate Number of superficial feet in the several compartments set apart for Passengers other than Cabin Passengers.	Total Number of Statute Adults the Ship can legally carry, exclusive of Master, Crew, and Cabin Passengers.	Intending to touch at	Bound to	Name of Master.		
<hr/>								
Cabin Passengers.		Number of Souls.		Equal to Adults, computed by the Passengers' Act.				
ADULTS.								
Married	{ Male, 12 years & upwards							
	{ Female, " "							
Single	{ Male, " "							
	{ Female, " "							
CHILDREN.								
Males, between 1 and 12 years	-							
Females,	" Males "							
Under 1 year	{ Females							
Total								
Intermediate and Steerage Passengers.				Number of Souls.				
ADULTS.				Equal to Adults, computed by the Passengers' Act.				
Married	{ Male - - -							
	{ Female - - -							
Single	{ Male - - -							
	{ Female - - -							
CHILDREN.								
Males, between 1 & 12 years	-							
Females,	" Males "							
Under 1 year	{ Females							
Total								
Crew.		Number.		Equal to Adults, computed by the Passengers' Act.				
Men	- - - - -							
Boys	- - - - -							
Total								
Total Number of Adults, including Crew, computed according to the Passengers' Act								

I, the undersigned, acting under the authority of the Passengers' Act, do hereby certify that the foregoing appear to be the burthen and dimensions of the above-named Vessel, and also to be the number and description of her Passengers and Crew. And I further certify, that I have approved of the quality of the provisions, water, and stores put on board for the use of the Passengers, and that I have inspected the List of Passengers of the said Vessel, and that it appears to be correct, and that the number of Passengers does not exceed the number allowed by the Passengers' Act. And, finally, I certify that all the requirements of the said Act, so far as the same can be complied with before the departure of the said Ship, have been duly complied with, and that the said Ship is, in my opinion, seaworthy, in safe trim, and in all respects fit for her intended voyage; and that her Passengers and Crew are in a fit state to proceed.

Dated at _____ this *{Signature of Emigration Officer, or}*
 day of 186 . *{Officer of Customs, or}*
{as the case may be}
for the Port of _____

APPENDIX No. 30.

SPARE BEDS, RETURN of the Spare Beds, Bedding, and Mess Utensils expended on board the Emigrant Ship " " from the time of her departure from the Port of until her arrival at and of the quantities then remaining on board.

Articles put on Board,	Number and Quantity.	When expended or issued.	Date of Expenditure or Issue.	Reason for their Issue.		Number or Quantity remaining on Board.
				Number or quantity so expended or issued.	Reason for their Issue.	
Double Beds and Bolsters	-	-	-	-	-	-
Single ditto	-	-	-	-	-	-
Pairs, ⁹ / ₄ Blankets	-	-	-	-	-	-
⁹ / ₄ Counterpanes	-	-	-	-	-	-
¹ / ₄ ditto	-	-	-	-	-	-
¹ / ₄ Sheets	-	-	-	-	-	-
¹ / ₄ ditto	-	-	-	-	-	-
Pillow Cases, large	-	-	-	-	-	-
Ditto small	-	-	-	-	-	-
Towels	-	-	-	-	-	-
Blue Serge Shirts	-	-	-	-	-	-
Yards of Thick Flannel	-	-	-	-	-	-
Bags (large)	-	-	-	-	-	-
Ditto Small	-	-	-	-	-	-
Plates	-	-	-	-	-	-
Mugs (pint)	-	-	-	-	-	-
Ditto (3-pint)	-	-	-	-	-	-
Knives and Forks (large)	-	-	-	-	-	-
Ditto ditto (small)	-	-	-	-	-	-
Table Spoons	-	-	-	-	-	-
Tea Spoons	-	-	-	-	-	-
Tea Pots	-	-	-	-	-	-
Sugar Boxes	-	-	-	-	-	-
Wash Bowls	-	-	-	-	-	-
Chambers	-	-	-	-	-	-

I certify that the above is a true account " of the expenditure of the several articles of Beds, Bedding, and Mess Utensils, placed on board the Emigrant Ship " " by the Commissioners' Officer at absolutely requisite for the reasons set forth in each case.

Surgeon Superintendent

N.B.—Before sailing the Surgeon will be careful to see that the quantities stated in the second column of the return are duly on board, and will make such entries in his Journal of the dates of expenditure, the number issued, and the reason of these Articles, as shall afford the proper officers in the colony due means of judging of the propriety of their distribution.
As the Beds, Bedding, and Mess Utensils put on board by the Commissioners are the property of the Colony, and those remaining unused will be sold after arrival, the Surgeon will see that proper care is taken of the surplus, and that it is handed over to the Colonial Authorities, together with this return, duly filled up.

of the Emigrant Ship "

" from the time of the issue of these Articles, as shall afford the proper officers in the colony due means of judging of the propriety of their distribution.
As the Beds, Bedding, and Mess Utensils put on board by the Commissioners are the property of the Colony, and those remaining unused will be sold after arrival, the Surgeon will see that proper care is taken of the surplus, and that it is handed over to the Colonial Authorities, together with this return, duly filled up.

APPENDIX No. 31.

Form of
Surgeon's
Journal.

SPECIMEN OF A SURGEON'S JOURNAL FOR A PORTION OF
THE VOYAGE.

N.B. All the principal and material occurrences should be carefully recorded, and the paragraphs distinguished by numbers and marginal readings.

Joining.

1. On _____ the _____ of _____ in pursuance of my instructions from the Board, I attended at the dépôt in _____ at noon, to inspect the emigrants proceeding by the _____ to Melbourne.

Inspection and
Embarkation of
Emigrants.

2. In the course of this and the following day examined and approved _____ adults and _____ children (including infants). The above number were embarked at four p.m. of the _____ instant.

Cook dis-
charged and
two Emigrants
appointed in his
stead.

3. *August 5th.*—This evening the master found it necessary to discharge the cook provided for the emigrants, on account of drunkenness and insubordinate conduct. Two emigrants, A.B. and C.D., were appointed in his stead, one as cook and the other as his assistant, the master agreeing, with the sanction of the emigration officer, to pay them at the rate of _____ per month (the cook to receive two-thirds and the assistant one-third), so long as the duty was performed to the satisfaction of the Surgeon Superintendent.

Accident to a
child.

4. *August 6th.*—One of the children, Matilda Small, fell into the main hold this morning upon her head, but her fall was broken, and she escaped without any very serious injury.—(*Vide Medical Journal.*)

Books.

5. Received the books, &c., provided by the Commissioners for the instruction and amusement of the emigrants during the voyage.

Sailed from the
river.

6. *August 8th.*—Sailed at noon; anchored in the evening off _____.

Selection of
Constables.

7. This evening I called the people together upon deck, caused the regulations to be read aloud, and selected three persons who appeared to me the best adapted to fill the office of constable, viz., John Todd, a carpenter, Richard Prescod, a blacksmith, and William Miles, an agricultural labourer.

8. The heads of Messes, previously chosen by the people themselves, were also this day recognized and approved by me.

Selection of
Schoolmaster.

9. No schoolmaster having been appointed by the Commissioners, Mr. Thomas Ludd, a respectable and apparently well qualified individual, was selected by me for the purpose. Delivered to him the School Books, and communicated with him generally respecting the various arrangements connected with his department.

Fresh Provi-
sions.

10. Previous to sailing, the Master laid in fresh Provisions for two days, not being able to obtain more at _____ without taking the refuse of the market.

Mess Pork,
50 P's opened.

11. *August 10.*—This day Salt Provisions were issued, the first cask of Pork, marked 50 P's, being opened.

Dispute about
Provisions.

A dispute between the Third Mate of the Ship and one of the Emigrants respecting the issue of Provisions. I requested the Master to be present whilst the case was examined into. The weight of testimony proved however against the Emigrant. It also appeared

that he had in the first instance resorted to very abusive language towards the Mate, without any just cause of grievance. I therefore dismissed the complaint.

From the fineness of the weather few of the Emigrants have suffered from sea-sickness. Opportunity was thus afforded for accustoming them in some degree to the ordinary routine of the Ship. Soon after the Pilot left us, however, the wind shifted to the South-West, with rain, and a coarse night ensued.

12. *Friday 12th.*—The first cask of Beef marked O'Connor's India Beef 42 P's opened. Few however applied for Rations.

13. Between the 10th and the 13th many of the Emigrants suffered from sea-sickness; the pregnant women and some of the children severely; and recourse was had to the Medical Comforts' Store in the more urgent cases. The Regulations and the general routine of the Ship, although necessarily to a certain extent suspended, were carried out as far as circumstances would permit, and resumed as early as practicable.

14. The decks were scraped and afterwards scrubbed with holly-stone and sand on Monday, Tuesday, Wednesday, and Saturday morning. The beds and bedding also were aired, and the bottom boards of the berths taken up and scrubbed twice in this week. The decks were thoroughly sprinkled with dilute solution of chloride of lime on Saturday evening, and portions of the dry chloride suspended in three buckets at equal distances between decks.

15. *August 14th, Sunday.*—Mustered the people on deck in the Sunday muster. order of their berths and inspected them, agreeably to regulations. Afterwards performed Divine Service, and distributed a portion of Divine Service. the Bibles and Testaments. In the afternoon, assisted by the Schoolmaster, I established a Sunday school for the children.

16. Finding that some of the Emigrants were Dissenters (who nevertheless readily attended the Church Service in the morning), set apart for them a small place for a Sunday evening meeting, viz., the deck in front of the Schoolmaster's berth in the after part of the ship, which was nearly as large as the female hospital, and sufficient for the purpose. This arrangement was very acceptable to them.

17. *August 15.*—Made the "Start," this afternoon. Anchored in Plymouth Sound at 10 A.M., landed immediately and put myself in communication with the Commissioner's Officer at the port.

18. *August 16.*—Stephen Boulter, one of the Emigrants from London, applied for permission to give up the voyage. Finding that his only grounds for this was the sea-sickness of himself and wife whilst coming down the Channel, I called the people together and reasoned with him before them. Succeeded in reconciling the man to his undertaking.

19. Examined the Emigrants waiting at the Plymouth dépôt, who were then embarked.

20. Fresh provisions have been served out on board, agreeably to the terms of Charter-party.

21. *August 17.*—Final sailing orders, dated 9 A.M., delivered on board by the Emigration officer; fumigated the ship this evening.

O'Connor's
India Beef,
42 P's.

Sea Sickness.

Daily routine.

Children's
Sunday School.

Arrangements
for Dissenters.

Arrival at
Plymouth.

Final Sailing
Orders
delivered.

Daily routine. 22. *August 25th.*—Decks scraped, &c. Beds, &c., aired as usual. Examined the children on deck previously to their being sent to school. Gave notice that I should hold a General Muster every Thursday morning, for the purpose of inspecting the children and also the adults, with reference to personal cleanliness, and that I should expect all to appear in clean linen on that day of the week, as well as on Sundays.

Hospital Assistant appointed. 23. Appointed Charles Burston (hitherto on probation) my hospital assistant.

Washing arrangements. 24. There being three or four unoccupied berths in the married men's compartment, I placed in them, as near their parents as possible, such children as had hitherto formed the third in a berth.

Daily routine. Decks wet. 25. *August 29.*—Appointed Mondays, Tuesdays, and Fridays for washing, there not being yet a sufficient number of tubs to admit of all washing who require it without an additional day being allowed. Directed one of the constables to attend early on each of these mornings to serve out the water and assign the tubs fairly, giving a proportionate number of turns to those who had the greatest number of children. Large families will thus be able to wash once a week at least, smaller ones once in ten days, and single persons once a fortnight, and oftener in the tropics, if required, as the number of tubs will be increased weekly as we proceed by dividing empty water casks.

Screen for the Hatchways erected. 27. *August 30.*—Rain. Decks scraped, &c. Beds not aired on account of the weather. The wet having found its way down the hatchways in spite of the tarpaulins above and the swabs below, represented to the master the necessity of some further arrangement to keep the people dry without depriving them of the requisite ventilation. Caused a spar to be rigged fore and aft across the fore and middle hatchways (one from the bows, the other from the stern of the long boat) at a height of six feet above each, and over these the tarpaulin to be suspended tent fashion, the windward side being secured and the leeward raised to admit of ventilation. Above, a spare sail to be thrown, if necessary, and the latter, as well as the tarpaulin for each hatchway, to be kept always at the end of the long boat next to it, so as to admit of being adjusted by the constables or watch in the day or night at the shortest notice. For the after hatchway a somewhat similar arrangement (as far as practicable) to be prepared forthwith. Swing stoves used to dry the decks.

Fixed Days for cleaning Bottom-boards of Berths. 28. *August 31st.*—Finding a general direction that the bottom-boards of the berths be taken up twice a week, insufficient to ensure a uniform practice of cleanliness in this respect without certain regular days being specified for the purpose, fixed Wednesdays and Saturdays, and instructed the constables to see that they were taken up and scraped, and the spaces beneath them dry-scrubbed regularly on these days at the hour of daily cleaning the "between decks," and, weather permitting, the boards carried on deck afterwards.

Daily routine. 29. *September 1st.*—Decks scrubbed. Beds aired as usual. Muster on deck for the purpose of inspecting the adults as to per-

Ship sprinkled with solution of chloride of lime, and use of dry chloride (suspended between decks) renewed.

sonal cleanliness, and also the children especially. For the more convenient examination of the children, I find it expedient to muster all hands on one side of the deck at first, and then pass them individually as they are called through the space between the capstan and knight-heads. On Sunday the muster is arranged (according to regulation) in the order of the respective berths.

30. *September 2nd.*—Decks scrubbed, &c., and beds aired. Daily routine. Washing. The people had access to their luggage.

The men encouraged to bathe, tubs being provided in sufficient numbers for all to use on alternate mornings by rising early, or by aid of the hose and pump an excellent douche bath is formed, capable of supplying any number in the lee scuppers.

31. Some articles having been lost by one of the emigrants, ordered a general search. All hands on deck and the ladders raised, whilst the constables searched the berths and bags in rotation, assisted by the owner of the missing articles, and certain women selected for the purpose. The berth of the loser was begun with. Certain of the articles were discovered, and it would seem they were taken by mistake. This process has been adopted once before, when the missing articles were found to have been mislaid in the owner's berth; and the knowledge that it will be repeated when necessary will tend to deter parties from wilful misappropriation.

32. *September 21st.*—Crossed the Equator in the night in ^{Crossed} _{Equator.} $13^{\circ} 45' W.$

The S.E. Trades began to fail on the 29th, &c., &c., &c.

(Signed) *A.B.*,
Surgeon Superintendent
of the Emigrant Ship—.

GENERAL REMARKS AND SUGGESTIONS AT THE END OF THE JOURNAL.

In compliance with the directions contained in the 78th Article of my Instructions, I now proceed to submit such General Observations and Suggestions as I have to make with reference to the Passage, Regulations, Victualling, and to the Service generally.

(N.B.—Then should follow the Observations classified under distinct heads, as for example:—Passage, Ventilation, Regulations, Dieting, Medicines, Medical Comforts, General Conduct of Emigrants, Ditto of Officers of the Ship, &c., and lastly, such Suggestions (mentioning others) as the Surgeon may consider calculated to obviate defects or to promote the efficiency of the Service and the comfort of future Emigrants.)

APPENDIX No. 32.

Form of
Return of
Number
Disembarked.

SPECIMEN OF FORM OF RETURN TO BE MADE ON THE LAST PAGE* OF THE SURGEON'S JOURNAL.

Ports at which the Emigrants were Embarked.			Ports put into after Sailing Orders.			Arrival.	
Plymouth.	Port.	Date of Arrival.	Cape of Good Hope.	Port.	Date of Sailing.	For Water and Fresh Provisions.	Cause.
10th July 1866.		11th July 1866.		12th September 1866.	When.		
				19th September 1866.	When left.		
				Sydney.		Port of Destination.	
						15th November 1866.	Date of Arrival.
Number of Emigrants embarked Deaths, if any, before making the Cape Deaths after passing the Cape			150 Children under 7. Adults.			220 8	
Births on the Voyage			1 Children over 7.			212 5	
Number of Emigrants landed			149 43 25			217	

* The preceding page should contain a list of the names and ages of the Emigrants who have died on the voyage, with the date of their decease and the cause of their deaths, and a list of the children born on the passage, with the date of their birth, the sex, and the names of the parents.

APPENDIX No. 33.

FORM of ABSTRACT of MEDICAL JOURNAL, for the Week ending

NAME.	AGE.	DISEASE.	How many Days since entered for Treatment.	If discharged in course of the Week, state the reason.

APPENDIX No. 34.

FORM OF SURGEON'S REPORT OF ARRIVAL.

Surgeon's
Report of
Arrival, Aus-
tralian Voyage.

SIR,

Place _____

Date _____

Subjoined is a classified summary of the principal events which occurred on board the ship _____, and of the observations which I have to bring under the notice of the Commissioners :—

Port of Final Departure.	Date of Final Departure.	Date of Arrival.	No. of Souls Embarked.	No. of Births on the Voyage.	No. of Deaths.		Total No. of Souls landed.
					Adults.	Children.	

*Nominal List of Deaths on the Voyage.**

Name.	Age, as per Nominal List.	Date of Death.	Cause of Death.

* If it can be done without delaying this Report, the deaths in quarantine should also be given, stating whether they occurred before or after landing.

List of Births on Board.

Mother's Name.	Date of Birth.	Sex of Child.

This Report should also contain information on the following points :—

1. THE SHIP AND ITS ACCOMMODATION.
2. OFFICERS OF THE SHIP.—Their conduct and general behaviour towards the emigrants? }
3. PROVISIONS AND WATER.—Whether ample and good?
4. MEDICAL COMFORTS.—Whether ample and good? If not, particularize the deficiencies. }
5. MEDICINES.—Whether ample and good? If not, particularize the deficiencies. }
6. STATE OF HEALTH, &c., OF THE PEOPLE.—State the condition and general state of health of the Emigrants on arrival. At what period of the voyage did sickness prevail, and what was the principal disease? Did it prevail more in one part of the vessel than another? } And what, in your opinion, was the cause of it?

Specify in the Table the principal Diseases and the Number of Cases treated in each week.

Weeks.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	Total Number of Cases,
Ending.																					
Names of Diseases.																					

7. EMIGRANTS.—What was their general conduct, especially that of the single females? In cases of serious misconduct, state names and particulars. }
8. REGULATIONS.—How observed? What breaches, if any, reported for punishment in the colony? }
9. SCHOOL.—Whether regularly attended? Numbers. } What results?

10. WATER.—Was there a water distilling apparatus on board, and by whom made? How much water did it produce daily, and at what consumption of fuel? If it had a cooking apparatus attached to it, state how it answered. Was the water produced of good and wholesome quality, and sufficient for daily use throughout the voyage?

11. VENTILATING APPARATUS.—Was there any on board, and whose? Did it answer, and to what extent?

12. EMPLOYMENT.—What prospect for Emigrants?

13. GENERAL REMARKS AND SUGGESTIONS, if any.

State number of voyages
you have made - - - - - { With Government Emigrants to
Australia and Cape - - - - - }
With Coolies to _____.

(Signature) _____ Surgeon Superintendent of
the Ship _____.

N.B.—This Report is to be addressed to THE EMIGRATION COMMISSIONERS, No. 8, Park Street, Westminster, London, S.W., and sent to them by the first opportunity after the Surgeon arrives in the colony. A duplicate is to be lodged with the Colonial Secretary or Immigration Agent.

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